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THE
VETERINARIAN;

OR,

MONTHLY JOURNAL OF VETERINARY SCIENCE,

FOR 1843.

VOL. XVI.—VOL. II. NEW SERIES.

EDITED BY

MESSRS. YOUATT AND PERCIVALL,

ASSISTED BY

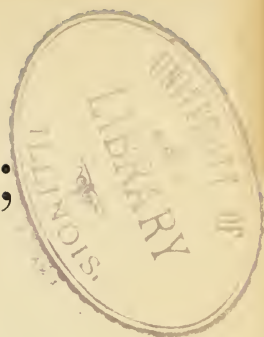
PROFESSOR DICK AND MR. KARKEEK.


Ars Veterinaria post medicinam secunda est.—Vegetius.

LONDON:

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THE

VETERINARIAN.

VOL. XVI, No. 181.] JANUARY 1843. [New Series, No. 13.

VAPOUR-BATH FOR HORSES.

PRACTITIONERS of veterinary medicine for years past have envied surgeons the advantages they derived in their practice from warm and vapour baths, and attempts have been most laudably made by some of our more enterprising members to supply this *desideratum* in veterinary therapeutics: obstacles, however, of a formidable character have stood in their way, which, until the present day, by no one have altogether ever been surmounted. The object sought after being a warm water bath, there was to be taken into consideration, first, the space required for the bath and the copper, not to be found in all horse-infirmaries in crowded towns; secondly, the cost of these of the large dimensions required; thirdly, the continual expense of fuel; fourthly, the difficulty that might present itself of enticing the horse to enter the bath, for any compulsory measures to do so would in many cases counteract all the benefit derivable from the bathing. At the horse infirmary at Woolwich, many years ago, the writer of this remembers, it was proposed that a bathing place should be constructed for the patients: the estimated expense, however, of putting the project into execution was such as to deter even those who had advocated in strong terms its probable utility, from recommending its adoption to the Honourable Board of Ordnance: the affair in consequence fell to the ground.

The various ways in which steam has been made applicable as a warm bath for man, induced one, now no more, but whose memory is, and long will remain, dear to us all—the late Mr. John Field—to turn his mind to the subject; and so late as about four years ago some experiments were made in Mr. Field's infirmary, in which Mr. Read, the well-known ingenious inventor of the stomach-pump, &c., &c., assisted, and took a great deal of interest. The means, however, the experimenters took to generate steam proved inadequate, affording a very insufficient supply of steam; and their mode of conveying it into the receptacle, intended as a bath, in which the horse was placed, turned

out such as to scald the animal at the place where the steam gained admission, thereby rendering the whole scheme abortive. Mr. Read, however, did not permit this failure to discourage him: his ever-active and persevering spirit led him on to fresh experiments, in one of which, in the early part of the present year, made at his manufactory, he succeeded in raising the temperature of the steam conducted into a canvass case or bag, intended as a bath (in which was a wooden horse) nearly to 140° . Although in this experiment the canvass was kept from falling in contact with the horse's back or sides, by the intervention of a frame of basket-work, still there was a danger of scalding: added to which, there was required a charcoal fire at, of course, some expense, though that might not amount to any thing considerable.

With a perfect recollection of all that had been done by his lamented brother, and with a full persuasion that he had steam of sufficient amount on his premises at command, Mr. Wm. Field wanted but the receptacle—the bathing-place—to commence a fresh series of experiments. Chance threw in his way what his mind, save at a good deal of expense, saw but little prospect of realizing. Being one day at the East India Company's Establishment at the docks, it struck him all at once that one of their boxes, used for the purpose of conveying their horses on board of ship, would prove the identical horse-bath he had so long been contemplating. One of the boxes was accordingly removed to Mr. Field's infirmary, and forthwith he zealously set about obtaining his object.

In order to shew by what simple, and yet effectual contrivance Mr. Field was enabled to carry his project at once into execution, it will be necessary to state that Mr. F's infirmary has—what every horse-infirmary ought to possess—a large boiler, for the purpose of affording a constant supply, by day and night, of hot water. This boiler (*a* in the plate) has a metallic pipe (*c*) issuing from its summit, into which the steam, as it forms while the fire is kept up, rises and passes off (through *b*)—at least as it did formerly—into the flue at one time, but since that, into the open air: the alteration having been made from the circumstance of the damp being found to damage the brick-work. Subsequently, it was suggested to Mr. Field, that this waste steam might, by being conducted through a worm (*h*) and condensing trough (*g*) be rendered useful, not only as distilled water, but also in maintaining the temperature of the water contained in the trough to what is requisite as “chilled water,” for horses in physic and other patients.

But Mr. Field now required the steam for a grand purpose—

he wanted a vapour-bath. Accordingly, he had a branch-pipe (*e*) affixed to the main one (*c*) issuing from the top of the boiler, and furnished this, as well as the original branch-pipe (*f*) with a stop-cock (*i*), enabling him to direct the course of the steam, and to turn it on and off at pleasure. The new branch-pipe (*e*), he had made of sufficient length to pass through a partition wall into an apartment, which we, for distinction's sake, may call the bath-room (*m*), at its entry into which he discontinued the metallic pipe, substituting for it a flexible tube (*k*), which he could as he pleased wind in any direction. The steam was now turned on : a torrent of it, full and hot, issued from the mouth of the flexible tube : nothing, in fact, appearing wanting but the receptacle.

This was ready: the horse-box, which had been previously lined with flannel, and roofed over with hoops and tilting, and fitted up, over the doors, before and behind, with canvass curtains, was moved into the bath-room. The question now was, through what part of the box shall the steam enter? The place (*n*) most judiciously chosen was the *side* of the apartment, close to the flooring, and at a point intermediate between the animal's fore and hind legs, while standing, or mid-distance between the front and hind parts of the box; a similar entrance-aperture was likewise made through the other side, directly opposite this one, to which steam was conveyed through an extension of the tube underneath the flooring of the box. Entering in this situation, and through two orifices at once, the current of steam immediately diffuses itself over the apartment, rising in clouds of vapour from the floor underneath the belly of the horse without any danger whatever of scalding him. What condensation of the steam takes place within the pipes is received by the tube running underneath the box, and from it the water distils through a waste stop-cock (*l*).

Up a sort of platform — an inclined plain, lathed transversely, to prevent slipping—the horse is led into his bathing-place, the doors of which, both back and front, being thrown open, and the curtains turned aside, without, in general, any alarm or repugnance on his part, or only of such trifling nature as is easily removed by coaxing and 'clever handling on the part of the groom. The doors are now with caution shut, the curtains closed, and in front, with strings or tapes, secured around the horse's neck: it being understood that, on every occasion, *the animal's head is to be excluded from the bath*. This is a rock on which those have had their good intentions wrecked who have found that a hot-bath increases the patient's pulse and respiration, and on that account does, to use their own words, "more harm than good." The steam, previously "got up" by the man at the

boiler, is now turned on. With a little humouring by a man standing at his head, the horse, though he may be at first displeased with his situation and be fidgetty, soon becomes reconciled and quiet, and for the space of twenty minutes, or, even in some instances, half an hour, we hear no more of his inquietude: his bath appears to be growing comfortable to him—he seems to be enjoying it. At the expiration of twenty, or from that to thirty minutes, however, he begins again to express uneasiness, arising now, probably, from his feeling himself uncomfortably warm; and if a thermometer be introduced at this time into the bath, we shall find the temperature of the steam has been raised to 140° or 150° of Far*. Continued in the bath beyond this, his expressions begin to amount to more than uneasiness, and speedily to attain that character that, five minutes afterwards or so, we are, from feelings of humanity, induced to set our subject of experiment (a healthy one) at liberty. While in the bath, so long as he is not irritated, neither his pulse nor his respiration can be said to be augmented; although, soon after he is come out of the bath, he is dripping with perspiration from every part and pore of his skin, save his head. It was at first doubted that this was really sweat; it was imagined to be nothing but condensed steam: three circumstances, however, proved that it was secretion, not condensation:—the first is, that it does not, in its fullest abundance, make its appearance until some short time after the horse has left the bath; the second is, that the scraper, then used, elicits fluid from the roots of the hair; the third, that the fluid, thus scraped off the skin, has a saline taste, similar to that of the matter of perspiration.

Under what circumstances—in what states of disease or even of health, a vapour-bath may prove desirable or beneficial, one cannot at this early period of its use be expected to offer any satisfactory opinion: the grand desideratum—the employment or application of the bath being accomplished, it cannot be long before we have cases to record of its utility. All veterinary establishments of any magnitude or importance must now be furnished with steam-baths: the Veterinary Colleges at London and Edinburgh, the Royal Horse Infirmary at Woolwich, and every private horse infirmary, can no longer remain without this necessary appendage to their present provisions for the curing of disease, the soothing of pain, and the comforting of their suffering patients.

* A stable-barometer was introduced between the curtains, and, after a time, withdrawn, and as quickly as possible cleaned from steam and inspected. This clumsy mode—the only means we had at hand—of measuring the temperature, shewed that the heat must be greater within the interior of the bath, and particularly underneath the animal's belly.

ON THE ELEMENTARY COMPOSITION OF THE DIFFERENT KINDS OF FOOD.

By Mr. JAMES ANDERSON, V.S., Leicester.

Messrs. Editors.—As E. Wilson, Esq., in his Lecture in the last VETERINARIAN, justly observes, organic chemistry has recently become a new science in the hands of the distinguished Liebig. There is too much supineness among us on this subject. If accurate tables of nutritive equivalents were accomplished they would be invaluable. I am sure there is latent caloric enough among us—Rien n'est impossible à celui qui a bon envie.

I read, in the Pharmaceutical Journal of September and October last, a Lecture on the elementary composition of different kinds of food, considered in reference to their nutritive qualities, by Dr. Pereira.

This appears to have been brought forward in consequence of the works of that pre-eminent chemist, Dr. Liebig, on Animal and Agricultural Chemistry, containing new chemico-physiological views; and these two luminaries in the temple of science are at issue on different topics, particularly on the production of animal heat and non-nitrogenized foods. The lecture is of the first importance to the veterinary as well as the human surgeon; but, from its length and complication, it is rather difficult to abridge; I have, therefore, selected such portions as are more immediately in connexion with the veterinary profession. Additions, also, are made, derived from other sources; at the same time, however, I do not presume to be an umpire.

A living body has no power of forming elements, or converting one elementary substance into another; therefore, the elements of which the body of an animal is composed must be the elements of its food.

The elements of the food of man are carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, iron, chlorine, sodium, calcium, potassium, magnesium, and fluorine. The union of two or more of these elements forms elementary principles; viz., water, sugar, gum, starch, pectine (vegetable jelly), acetic acid, alcohol, oil or fat (albumen, fibrine, caseine, vegetable and animal), gluten, gelatine, chloride of sodium, and these, being mixed, form food; thus, wheat consists of starch, gluten, sugar, and gum. By the union of carbon with oxygen, in whatever part of the system this is effected, heat must be evolved. Liebig, “by the conversion of starch or sugar into fat, oxygen is supplied to the system; and that, by the union of this disengaged oxygen with carbon (from the bile, for example) heat is evolved. It signifies nothing

what intermediate forms food may assume, what changes it may undergo in the body, the last change is uniformly the conversion of its carbon into carbonic acid, and of its hydrogen into water: the unassimilated hydrogen of the food, along with the unburned or unoxidized carbon, is expelled in the urine or in the solid excrements."

I.—*In Alimentary Principles.*

	<i>Per Cent.</i>
Proteine Com- pounds*.	Animal albumen (of eggs) 15.920
	Vegetable albumen (of wheat) 15.920
	Animal fibrine 15.817
	Vegetable fibrine 15.809
	Animal caseine 15.724
	Vegetable caseine.... 15.672
Gelatin- ous.	Gluten 15.98
	Tendons of calves' feet 18.470
	Isinglass 18.790
	Cartilage of calves' ribs (chondrine) 14.908

II.—*Compound Aliments.*

Wheat (dried in vacuo at 230° F.) 2.3
Rye (do.) 1.7
Oats (do.) 2.2
Barley (do.) at 212° F. 2.02
Rice (do.) 1.39

Compound Aliments (continued).

	<i>Per Cent.</i>
Indian corn or maize (dried in vacuo at 212° F.) 2.0	
Peas dried in vacuo at 230° F. 4.2	
Horse beans dried at 212° F. . 5.5	
White haricots .. (do.) 4.3	
Lentils (do.) 4.4	
Potatoes (fresh) 0.37	
Ditto (dried at 212° F.) 1.80	
Ditto kept 10 months 0.28	
Jerusalem artichokes (dried in vacuo at 230° F.) 1.6	
White garden cabbage 0.28	
Ditto (dried at 212 F.) 3.70	
Carrot (do.) 2.40	
Turnips 0.17	
Ditto (dried at 212° F.) 2.20	
Dried ox blood 15.08	
Dried muscular flesh (beef) .. 15.05	
Roasted flesh (roe deer) 15.23	
Ditto (beef) 15.214	
Ditto (veal) 14.70	

Recent writers conclude that nitrogenized foods are alone capable of conversion into blood, and of forming organized tissues; that, in fact, they only are the food properly so called. Liebig calls them the plastic elements of nutrition. The non-nitrogenized foods, it is said, are incapable of transformation into blood; and are, therefore, unfitted for forming organized or living tissues. They are, nevertheless, essential to health; and Liebig asserts that their functions are to support the process of respiration: and some of them contribute to the formation of fat.

Nitrogenized Foods, or Plastic Elements of Nutrition.

Vegetable fibrine.
Ditto albumen.
Ditto caseine.
Animal flesh.
Ditto blood.

Non-nitrogenized Foods, or Elements of Respiration.

Fat. Pectine.
Starch. Bassorine.
Gum. Wine.
Cane sugar. Beer.
Grape sugar. Spirits.
Sugar of milk.

* Fibrine, albumen, and caseine, both animal and vegetable, dissolve in a solution of caustic potash: if to the resulting liquid, acetic acid be added, the same precipitate is obtained, whichever of the above three principles has been employed. The substance thus precipitated has been called by its discoverer, Mulder, Proteine (from *πρωτείνω*—I hold the first place).

Dr. Pereira states the following arguments, and the comments on them:—

The first argument is, that as the animal tissues contain nitrogen as one of their essential constituents, and as this element cannot be created in the system, it must be derived from either the food or the atmosphere; but as it is not absorbed from the atmosphere in the vital process, it must be obtained from the food.

He quotes a number of authors to prove that during respiration nitrogen is both absorbed and exhaled by the blood or lungs. Liebig asserts that “no nitrogen is absorbed from the atmosphere,” yet admits of ammonia in the air. If nitrogen be not absorbed, the tissues can only obtain this element from food.

The second argument is, that non-nitrogenized foods alone are incapable of supporting animal life.

Gum, sugar, starch, or butter alone, cannot preserve the life of animals; as dogs fed exclusively on sugar and water, or butter and gum, died from thirty-one to thirty-four days. Geese fed on sugar and water, or gum and water, or starch and water, died from seventeen to twenty-four days: yet a lady refused to take any other nourishment whatever during several years than lump sugar: that people fed on potatoes require milk: that a diet of one nitrogenized principle exclusively is incapable of supporting animal life. Fibrine, albumen, or gelatine, taken separately, does not support life; even the artificial mixture of these principles is insufficient to preserve life—for dogs thus fed ultimately died with all the signs of complete inanition; while, on the other hand, a diet of muscular flesh, or of raw bones, or of gluten exclusively, is capable of complete and prolonged nutrition.

The third argument is, that the food of all animals, herbivorous and carnivorous, contains nitrogenized matters, identical in composition with the principal constituents of the blood and organized tissues of the animal body; and, therefore, the carbon of gum, sugar, and starch, and the carbon and hydrogen of the fats and oils, are not required for the production of blood.

Vegetables contain organic principles identical in composition with animal fibrine, albumen, and caseine. Liebig observes, “that they have the same proportion of carbon, hydrogen, oxygen, and nitrogen, which the animal principles contain, but also in possessing the same relative amount of sulphur, phosphorus, and phosphate of lime.”

The fourth argument is, that the quantity of nitrogenized food which herbivorous animals consume is amply sufficient for the growth and development of their organs, and for the supply of waste.

M. Boussingault demonstrates the truth of this statement in the case of the horse.

FOOD CONSUMED BY AND EXCRETIONS OF A HORSE IN TWENTY-FOUR HOURS,

CONVERTED FROM THE FRENCH WEIGHTS INTO AVOIRDUPOIS WEIGHTS, BY J. ANDERSON.

FOOD CONSUMED BY A HORSE IN TWENTY-FOUR HOURS.

Articles of Food.	Weight in Fresh State.			Weight in Dry State.			Carbon.			Hydrogen.			Nitrogen.			Oxygen.			Salts and Earthy Matters.									
	lb.	oz	dr.	gs.	lb.	oz	dr.	gs.	lb.	oz	dr.	gs.	lb.	oz	dr.	gs.	lb.	oz	dr.	gs.								
Hay.....	16	8	9	14	4	1	3	6	8	7	9	...	11	6	11	...	5	8	4	16	1	4	8	11				
Oats....	5	...	1	8	4	3	15	18	2	2	7	12	...	4	5	17	...	1	7	25	1	8	15	5	...	2	11	14
Water...	35	4	7	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	13		
Total ...	56	13	1	19	18	8	...	21	8	10	14	21	...	15	12	...	...	4	14	17	7	1	3	21	1	7	11	10
Deduct Excre- tions..	34	5	10	...	8	7	...	3	3	3	15	13	...	6	12	...	...	4	1	2	3	...	1	9	1	8	2	10
Excess of Food.	22	7	7	19	10	1	...	18	5	6	15	8	...	9	...	...	...	...	...	...	...	...	...	...	...	7	...	...

EXCRETIONS OF A HORSE IN TWENTY-FOUR HOURS.

Excre- tions.	Weight in Fresh State.				Weight in Dry State.				Carbon.				Hydrogen Nitrogen.				Oxygen.				Salts and Earthy Matters.								
	lb.	oz	dr	gs.	lb.	oz	dr	gs.	lb.	oz	dr	gs.	lb.	oz	dr	gs.	lb.	oz	dr	gs.	lb.	oz	dr	gs.					
Urine		2	14	19	...	10	10	12	...	3	13	10	...	...	6	13	...	1	5	9	...	1	3	7	...	3	14	1	
Excrements, 31	6	11	9		7	12	5	18	3	...	2	3	...	...	6	5	14	...	2	11	21	2	14	14	2	1	4	4	9

Total 34	5	10	...		8	7	...	3	3	3	15	13	...	6	12	...	...	4	1	2	3	...	1	9	1	8	2	10	

It appears from this Table that there is a surplus quantity of 370.416 grs. (13 drs. 15 grs.) of nitrogen, if ordinary blood contains 80 per cent. of water, and that the dry residue (20 per cent.) contains 15.07 per cent. of nitrogen sufficient to form 2457.1461 grs. of dried blood; thus, if $15.07 : 100 :: 370.416 = 2457.1461$, or $2457.1461 \times 5 = 12285.7305$ grs. of ordinary blood, equal to 1 lb. 12 oz. 1 dr. 8 grs., so that about $1\frac{3}{4}$ lb. avoirdupois of blood may be formed daily from the above quantity of food. Therefore if 100 parts of dried blood contain 51.96 of carbon, 2457.1461 will be 1276.7331 grs. of carbon. This being subtracted from 38043.3 grs. (5 lb. 6 oz. 15 dr. 8 grs.), the residual carbon in the Table, there remains $36766.\frac{5669}{10000}$ grs. of carbon to be thrown out of the system by the lungs and skin in the form of carbonic acid*.

Boussingault calculates that a horse expires daily about 4 lbs. avoirdupois of carbon. In reference to the salts and earthy matters, Thaer and Edinhof obtained by ignition from 3840 grains of the excrements of cattle fed at the stall, chiefly on turnips, the following:—

Lime	12.0
Phosphate of lime	12.5
Magnesia	2.0
Iron	5.0
Alumina with some manganese	14.0
Silica	52.0
Muriate and sulphate of potash	1.2
	<hr/>
	98.7

Mr. Ancell's theory of animal heat seems to have escaped the notice of these two learned gentlemen. "The source of animal heat is in the blood itself; it results from the molecular vital actions of that fluid; and the source of the higher temperature of warm-blooded animals is in the more energetic molecular actions continually going on between the red corpuscles and the liquor sanguinis. These molecular actions are obviously most energetic in the lungs; hence the relation between respiration and the heat of animals."

Mr. Ancell's Lectures.—Lancet, Feb. 29th, 1840, p. 829.

* There are a few discrepancies between Dr. P.'s calculations and mine, some of which are evidently typographic errors.

ON THE PROGRESS OF THE VETERINARY ART.

By Mr. G. BAKER, Reigate.

Dear Sir,—IN reviewing the progress of our profession during the past year, I see many causes for satisfaction at the good that has been already accomplished ; and I earnestly hope that the day is not far distant when its stability may be more firmly and undeniably established, alike by the unanimous concurrence of its individual members and the legal recognition of its claims by the legislature of the land. The stream of civilization is sweeping on, and we cannot arrest its progress ; and, whether willing or unwilling, we must be borne onward by the current.

Such changes are inevitable. It has been well observed, that “all national life is ever drifting on in a mighty current, which the strongest hand cannot for an instant stay. Each succeeding generation perceives around it a new scene of circumstance and being. We sweep past the roots of mighty mountains, of which the distant tops were but just visible to long-sighted men amongst our fathers. New interests spring up ; new combinations arrange themselves, and gather into solid strength. The whole face of society becomes altered around us unawares. They endeavour to act upon their old rules, and find with surprise, from the unexpected issue, how mighty a transformation had passed upon all around them whilst they dreamed not of it.” Far be it from me to blame or oppose this spirit of enterprise, which is the main spring of all that is great and admirable in existence ; but the true tact of success is to restrain its impulse within the bounds of probability, and not suffer it to expend its force in enthusiastic theories without practical results. I have watched with much satisfaction the progress of the new appointment at the Veterinary College. It must be a source of well-merited gratification to you to see the result of your long and unremitting labours at last successful, by the appointment of your old and respected pupil, Mr. Simonds, to the professional chair of that department of the science to which your attention has been so sedulously devoted. Honest, indeed, is the pride and great the consolation to one who has laboured arduously in a cause to which his energies have long been directed ; and to know the mantle has fallen upon one who has imbibed from him those truths he so zealously sought to enforce, and who will inculcate upon others the value of the knowledge so willingly poured forth, and so earnestly pursued. I feel that the ties that bind the instructor to the instructed are of no common or ordinary nature ; they grow with

our growth and strengthen with our strength, until they become entwined with the very fibres of our mental character: nay, the very spot where we imbibe instruction assumes a paramount interest in after-years, as it becomes associated with the youthful hopes of professional reputation and an honourable name achieved by industry and integrity. How much more, then, are we indebted to those who have watched while we slept; who pour forth from the treasured mines of accumulated experience that solid ore which we are to mould to the daily purposes of professional life! To our parent institution, then, as to our nursing mother, we are all bound to look up with filial veneration, and a good understanding between her and the profession at large must be the earnest wish of all who sincerely desire the permanent welfare of both. When it was at first projected to print the "Transactions of the Veterinary Medical Association" separate from *THE VETERINARIAN*, I was in some degree apprehensive lest it might prove injurious to the interests of that excellent periodical, to which provincial residents are especially indebted for professional information, both domestic and foreign. A year has now passed; and I have the satisfaction of seeing, under the good management of yourself and Mr. Percivall, that my fears were perfectly unfounded. There is a wide field and ample space for both to exercise that "diversity of operation with unity of design," which has ever been the handmaid of prudence and the herald of success; and I feel assured, from the honourable mind and generous nature of him who conducts the reports of the Veterinary Medical Association, that although separate in your duties, you will ever be united in working out good to the profession at large. But while we have cause to acknowledge and rejoice in our increased union, there is much left for us to do. There must be cultivation of personal intercourse and readiness to bear with those varieties of opinion which must spring from the necessary variations of individual character. In the moral as in the physical world the violent is never the lasting—the tree, forced into unnatural blossoms, bears them and dies. We must anxiously avoid any strain of personal invective, which is unworthy of our character as members of an honourable profession, and injurious to the very cause we thus so injudiciously advocate. Personal abuse and ungentlemanly language should be confined to those who can use no better weapons: the cause of truth does not require such moral pugilism.

" To prove its doctrine orthodox,
By apostolic blows and knocks."

Opprobrious epithets and degrading vulgarisms of thought and language should never be applied by one capable of reasoning by

proof and argument. A calm, temperate, and undisguised statement of facts and opinions will carry more weight than a violent abusive attack upon any one. But by assimilating our feelings to the individual temperament and personal peculiarities of each other, we shall minister individually and collectively to the good of our profession, and the general march of science and improvement. We must recognize the system of mutual dependence, assistance, and support, and labour together for our common good. There are so many disputed points in every science, upon which men of literature and learning disagree, that it is impossible to find two minds so constituted as to think on all subjects alike:—

“Discourse may want an animated No,
To brush its surface, and to make it flow;”

but the manner of expressing a difference of opinion has often been quoted as the surest test of that good breeding which may coincide without flattery and disagree without offence. Allow me again to congratulate our profession on our cheering prospects, and once more to urge that unanimity and good feeling towards each other, on which its future prosperity must mainly depend and which will be a stronger palladium for its security and welfare than any legal power can bestow without its co-operation.

I cannot close this desultory letter without adverting to the practical remarks contained in the admirable Oration delivered by my relative and friend, Mr. Thomas Turner, at our annual meeting. The facts which he narrates must prove the necessity that exists for us to use our most strenuous endeavours to obtain for our profession a charter, which will be the means of raising it to that standard of popular appreciation to which it is so justly entitled. The steps that have been taken by the committee towards the attainment of this desirable object he fully detailed, and, I am assured, they will be read with great interest by all. The liberal feeling evinced by the co-operation of the professors with the wishes of the profession at large are additional claims on our gratitude, and should bind more strongly than ever the bonds of that chain of mutual dependence, ready fellowship, and kindly good offices reciprocally given and received, which will unite together the different members of our profession in one compact and comprehensive whole.

And now, wishing yourself and colleague every happiness and prosperity, allow me to subscribe myself,

Dear Sir,

Your's very faithfully,

G. BAKER.

Reigate,
December 13th, 1842.

ON THE EXCLUSIVENESS OF THE PUBLICATION OF THE VETERINARY TRANSACTIONS — THE FALSE GROUND ON WHICH IT WAS FOUNDED—THE VALUABLE INTRODUCTION OF CATTLE PATHOLOGY—THE STRANGE IGNORANCE OF MANY COUNTRY PRACTITIONERS—THE PRESENT STATE OF CATTLE PATHOLOGY—ON PARAPLEGIA IN CATTLE—MR. T. TURNER'S ORATION — AND THE STRANGE DUPLICITY PRACTISED BY MANY UNCERTIFICATED MEN.

By Mr. J. F. BICKFORD, V.S., Kingsbridge, Devon.

Sir,—I HAVE the honour of receiving a printed circular from the Veterinary College, with the name of the worthy Professor of Chemistry attached to it. It informs me of the intention of the Committee of the Veterinary Medical Association, in reference to the publication of its "Transactions."

Hitherto I have not been a subscriber, nor am I acquainted with the price of the work; but I regret that the Council or the Committee should have determined to publish an account of their meetings and discussions through any other source than that in which we originally received them, viz. the pages of *THE VETERINARIAN*. I have some indistinct recollection of having read, or being informed, that the Committee connected with the Association unanimously resolved, that its "Transactions" should be circulated only to the graduates of the College. For my own part, I regret that they should have decided on such a step. It ill becomes a body that are zealously making their struggle for a *Charter*, and thereby obtaining professional rank, with its immunities and privileges, to endeavour to make its Transactions a matter of secrecy, by circulating them exclusively to the members of the veterinary art: for it is but an *art* after all, as Mr. Turner was reluctantly compelled to acknowledge at the Warwick sessions.

Science courts the open day. Truth has nothing to fear from the most extensive and indiscriminate circulation; nor should we, in my humble opinion, at all suffer in our interests, if the whole matter about to be published for the sole and separate use of the veterinary body were made as public as an advertisement in the *Times* newspaper could possibly spread it. My experience enables me to confirm this statement in reference to myself. The more *THE VETERINARIAN* has been circulated in a farmer's club with which I am connected, the more do the parties reading that work confide in and appreciate the qualifications of a veterinary surgeon in comparison with the uneducated and ignorant farrier. Will any reasonable man believe that the popular lecture deli-

vered by Mr. Ferguson, in Dublin, on the prevailing epizootic, or that of Mr. Stewart (late of Glasgow), delivered in the Hall of Science, at Sydney, New South Wales, before a mixed audience, were at all calculated to lessen either of those gentlemen in the estimation of their hearers or their employers? On the contrary, would not the thorough acquaintance displayed by Mr. Ferguson on the prevailing disease tend to exalt him in the estimation of owners of cattle?

By what rule of reasoning, then, is the scientific discussion of any matter regularly brought before the Veterinary Medical Association at all likely to prejudice the general weal of the veterinary surgeon with the community? Did the publication of Dr. Elliotson's admirable clinical lectures, as delivered to the students in the Theatre of St. Thomas's Hospital, and published in that highly useful and equally popular periodical, the *Lancet*, have a tendency to diminish the learned doctor's practice? Oh, no!—he admitted to his class, that, since the medical press had published to the world his clinical observations, his practice in the course of two years increased in a quadruple ratio. Is it, therefore, likely that our practice would diminish by an extension, or an admission at least, of the public to the privilege of reading the debates of the Association through its original channel?

I rejoice to find that the trustees of the College have, at length, appointed a teacher of cattle pathology. The importance of it must be best known to those who were sent out from the College some ten years since, “with all their blushing honours thick upon them,” into an agricultural district, where one-half of the practice of a veterinary surgeon consisted in an attendance upon neat cattle and sheep. Many of those young men, at the time referred to, had not even served an apprenticeship with a veterinary surgeon; and many who had, and even their preceptors in large towns and cities, scarcely ever saw or were ever called to attend the diseases incident to this class of patients. Such I can aver was the case with myself, and my instructor was the present Alderman Steere, of Southampton. What a sorry position some of the practitioners cut, when called on, in their new vocation, to attend some difficult case of parturition in the cow or sheep! How frequently did they display a want of tact and judgment in affairs of this description, which subjected them to much mortification!

In a visit which I made to London, and to the Royal Agricultural Society, at Bristol, I had an opportunity of seeing a case in point. A veterinary surgeon who passed in 1832, and who had a tolerable horse practice, but, I believe, little among cattle, went to see a cow that had calved on the previous day. The

placenta was retained. I observed that "I always removed it within twelve hours, or less, if near my own residence." "What! do you mean," said he, "you cut it off?" "No, certainly not: pass your hand up the uterus; carefully free it from its adhesions, and remove it." To this he appeared to be quite a stranger. Now, if a regular system of instruction had been given at the College during the pupillage of this veterinary surgeon, he would not have shewn such an unacquaintance with the commonest every day practice of cattle pathology. A professor, however, being now established for the purpose of teaching the anatomy, physiology, &c. of this valuable class of animals, I earnestly trust that much good may be derived by the pupils, as well as the public. But whence is the knowledge of diseases to be obtained? not, certainly, from mere lectures. The lecturers on human medicine strongly inculcate that the bed-side is the only source from which the pupil can obtain the discriminating power of marking the various changes and consequent treatment in disease. Will the Veterinary College afford the veterinary pupil an opportunity of obtaining such a desideratum? Alas! I am afraid not, if the information I had from a college professor be correct. When the Royal Agricultural Society made a donation to the trustees of the College, in order to provide a qualified teacher to instruct the pupils in that branch of which Mr. Simonds is now the recognized lecturer, and after sheds had been provided for the reception of this new class of sufferers from disease, not three cases were sent to the College in as many months. What a jejune and meagre affair to enable a class to get the requisite knowledge, so as to qualify them to start with *practical* advantage to themselves, or to those by whom they may, perchance, be employed.

There may be means of practical instruction with which I am unacquainted; I only hope that the object for which Professor Simonds is appointed may prove eminently successful.

"'Tis a consummation devoutly to be wished."

There is a disease which I hope Mr. Simonds may be able to throw some light upon: I mean puerperal fever. I can scarcely say that I have been successful in the treatment of cases of it; and I can assure you the instances of want of success have been numerous; and many a valuable beast have I seen die under the withering and destructive power of the attack; and I think my treatment has been as varied as the patches of a harlequin's jacket. I have also pursued that recommended by Mr. Friend and others, and in their hands said to be successful; but with me the same treatment has not had the slightest benefit. I have

used external stimulants on the spine or on the back, in all their varied forms; also the internal use of strychnine, narcotics, purgatives combined with stimulants, in every kind of dose; bleeding, and abstaining from it; and all equally unsuccessful.

In the treatment of disease I have always been disposed to stick to the "*nil desperandum*" motto; but in the *paraplegia* attendant on calving I am dead beat, and fairly give it up. I know that "suspicion is at best but a coward's virtue;" but I really do suspect at times that cases of the description on which I now write, and which are sometimes detailed in *THE VETERINARIAN*, are rather the productions of the closet and of the imagination than faithful particulars of observations and facts; or, perhaps, it would be more charitable to say, that the disease in question assumes a more malignant type in the south of Devon than elsewhere: but, Sir, I would really ride fifty miles to see half a dozen instances of true paraplegia consecutive on calving treated with success. I have a strong objection to the term "puerperal fever:" it bears no analogy to the disease so termed in the human subject, the "*synochus puerperorum*" of Good, and therefore we are wrong in following the nomenclature of human medicine, when the disease and its progress are so dissimilar. I term this affection *paraplegia*, on account of its locality, the loss of voluntary power being confined, in general instances, to the parts posterior to the head or neck, and on both sides of the body, differing essentially from an interesting case of *hemiplegia* in a horse, which suffered paralysis on one side from compression on the lobe of the opposite side of the brain, the result of effused blood.

I should wish to make a few remarks on the post-obit examinations I have made, but I have already spun out this paper to a length I had no idea of at its commencement; I will, therefore, forbear, and simply state, that my own observations lead me to believe that it is chiefly an affection of the nervous system, whether primarily or not I leave to abler physiologists to decide. The brain and its continuation, the medulla oblongata, are affected: the latter frequently puts on the appearance of red velvet, and a softening in its structure, the result of inflammatory action.

Permit me, Sir, in closing this communication, and as it may be some time ere I trouble you again with my lucubrations, to offer a few words on the straightforward business-like Oration of Mr. T. Turner. I believe it to be a faithful narration of the present state of the veterinary art, with sound observations on the best mode of protecting its interests and securing its advancement. Mr. Turner appears to conceive, at no distant day, we shall realize the object of our wishes in the obtaining of a

charter. I am not so sanguine. Lord Eldon said "You shall not have a charter, the time has not yet come." The recreant whig, Sir James Graham, shewed the deputation a little more civility by listening for an hour to their statements in support of their claim; but with that I am afraid it will end, so far as Sir James Graham is concerned.

Mr. Turner has not told us what the Home Secretary did say; he did not, perhaps, say with Eldon, "The time is not yet come:" but I have heard that he told the deputation, that the public would know how to value our talent and worth as a body, if we were deserving, without our endeavouring to seek for imaginary privileges in the grant of a charter.

I must confess it is annoying to see in town, as well as in the country, imbecile, ignorant, and uncertificated men assuming the distinction of veterinary surgeon, to which they have no claim or just right. The first advertisement that struck my eye in *The Western Times* of the 22d Nov., ran thus:—In the District Court of Bankruptcy: "I William Henry Lathorpe Carpenter, at present, and for twelve months past, residing at Forder-street, in the parish of Moreton Hampstead, in the county of Devon, and being a veterinary surgeon, &c." Now I see no such name in the list of members published by authority of the College functionaries; what right, therefore, has Carpenter to call himself a veterinary surgeon?

A farrier in a neighbouring village, who some years ago was a postboy, and, subsequently, a stable-man, then took to a little doctoring; and now proudly sticks over his door "Stear, veterinary surgeon."

Some years after this man commenced his new vocation of a doctor, he attended a horse belonging to a friend of an eminent surgeon of this town, the late Wm. Eliot, Esq. The horse died, and, on the surgeon questioning the horse doctor on the cause of death, he coolly replied that he died of *inflammation of the gall-bladder*. Two individuals now practising within about ten miles,—one named Stenteford,—was sent to the College by the subscription of some gentlemen in the neighbourhood of a pack of foxhounds, but returned without a diploma. He, however, calls himself a veterinary surgeon, and, from having been at College, is believed to be so. The other instance is that of a Mr. Browse. He has paid a visit to the College, and represented himself as qualified by a diploma for practice. I am informed by Mr. Webb, a pupil now studying at the St. Pancras School, that this gentleman, like the former, has not passed an examination. I might go on *cum multis aliis*.

Mr. T. Turner speaks of a discerning public. Doubtless there

are persons who do discern and can distinguish the scientific man from the charlatan and the pretender. The latter is always armed with some invaluable recipe—of course a secret—for the cure of every ailment horse-flesh is heir to, while the former discusses the principles and objects to be obtained by the medicine he gives.

If we talk of a discerning public, why we live in an age of empiricism, both in human and veterinary practice. When Morison can manage to amass £50,000 by gulling the community with the astounding virtues of his universal pills, composed of aloes, gamboge, and colocynth—while others, on being so told by an ignoramus, would as readily believe that their horse died from inflammation of the gall-bladder—verily one-half of the people are the dupes of imposture, and but few can be said to think at all.

CASES AND OBSERVATIONS ON SPASM OF THE DIAPHRAGM.

By Mr. W. A. CARTWRIGHT, V.S., Whitchurch, Salop.

CASE I.—ON the 6th of Sept. 1842, about 3 P.M., I gave ʒiij of aloes (Mocha et Barb.) to a five-year-old blood pony, about twelve hands high, in fair condition, and that had ophthalmia in one eye.

7th. 11 A.M.—I saw him, and found that he had spasm of the diaphragm on the near side. The beating at the diaphragm and at the heart followed each other as regularly as possible, and each averaged about 50 in a minute. His physic was operating. I ascertained that this morning, about nine or ten o'clock, he had been taken out a distance of two miles, for exercise, on a very heavy sandy road, and that the spasm came on him when he had gone about a mile of the way. There was not the least spasm on the off side. I gave ʒss of pulv. opii in a soft ball.

4 P.M.—The fæces are only pultaceous. He is warm and comfortable. The spasmodic action is not so powerful as it was, and it and the heart beat now only about 40 in a minute, but as regularly as before.

In the course of the day, I thought I could feel a sort of double beating at the heart; first, the spasm at the side and then the double action of the heart itself, or a sort of echo of the first beat of the heart immediately afterwards. I never observed this in any case before. The spasm at the side appeared to be confined to a

particular spot, for, on putting my ear to the side, I could define it distinctly, and in this case it was nearly under the twelfth rib, at its most projecting part. The pulse at the jaw flowed regularly and distinctly.

About four o'clock I noticed an unusual circumstance—at least I had not observed it before—that occasionally, when an expiration was about half accomplished, the spasmodic action was not to be seen, or, at any rate, the least in the world, now and then. During this state of apparent relaxation, the pulse continued as usual.

Towards ten at night the spasm had nearly ceased, and the next morning entirely so; but the physic was operating more freely.

CASE II.—Sept. 30th, 1842. Early this morning the above pony was found in a similar state of spasm of the diaphragm as before. He had not been working, or out of the stable, for several days past. Yesterday he had eaten half a canful of potato peelings and bran; the former were cold, but the latter was warm.

9 A.M.—I now saw him for the second time. He is in the same state as before. The beating is still only on the near side. The pulse and spasm are 60 in a minute, and each follows the other with great regularity. The pulse at the jaw is quite distinct, but is small and hard. At the heart the pulse is to be felt, but not very distinctly so, being confounded with the spasm and shaking at the side. The beating at the side appears to come, as Mr. Castley and Mr. Brown have observed, “from before backwards,” and, on attentively observing, it seems as if the blow was given nearer the heart, and a gradual undulation of the sides outwards, from before backwards, takes place just like the waves on water. The spasm at the side is evidently more distinct and powerful during inspiration than expiration. The fæces are moist. He does not seem well—he is rather heavy, and his mouth a little clammy. Give ℥ij opii in a moist ball.

5 P.M.—About the same: give ℥ij of aloes Barb., and ℥i ammon. sesqui-carb. in a ball.

8 P.M.—The same. I have seen him several times in the course of the day, and watched him attentively. I generally found him lying down, and comfortable and warm all over. He has eaten scarcely any thing all day. The beating at the flank is distinctly more visible during inspiration, and it is at from about the tenth to the fourteenth rib, and at the middle of their length.

Oct. 1st, 8 A.M.—But little difference from the preceding night, but, if any thing: the pulse and the spasm are quicker,

the pulse is more feeble, and the spasm not so violent. The latter is still more distinct during inspiration. The heart's action at the side is now more easily felt, and it is nearer the time of the spasm than the pulse at the jaw is. The bowels are becoming more lax. He has not eaten any thing, but drinks a little chilled water.

12 NOON.—The medicine is acting on the bowels freely. The spasm is considerably subsided. He is a little uneasy and griped. He will not eat. The pulse is very distinct at the heart, and, I may say, fuller than natural. He is comfortably warm.

8 P.M.—He has been lying down the greater part of the day, and this afternoon is purging rather freely: he is a little uneasy, but does not roll about. The pulse from 60 to 70—the spasm not subsided. Give $\mathfrak{3j}$ opii and $\mathfrak{3ij}$ pip. Jam.

2d, 4 A.M.—The spasm beating a little, and he is rather uneasy.

8 A.M.—I was sent for, as he was thought to be dying. I found him very restless, and rolling over, and frequently getting up and down: he looks tolerably lively, and is warm. Pulse 68. Give $\mathfrak{3iss}$ tinct. opii. Is not purging, but the bowels are rumbling a good deal, and he trembles.

10 A.M.—No better, and, fearing enteritis, I took two quarts of blood from him.

3 P.M.—Is still uneasy, but not quite so violent: is warm all over, and not purging. Give $\mathfrak{3ss}$ opii. Drinks gruel.

4 P.M.—The spasm has ceased. Rub some lin. vesicat. on his flanks.

9 P.M.—Found him standing up, and he had been so for a quarter of an hour, but the owner said he thought he was not much different or better: he looks lively—the mouth moist—respiration a little increased, and he is very warm all over, but his pulse is 120; and, were it not for this rapidity of pulse, one would think that there was but little amiss. His bowels have not been moved all day. Drinks gruel, and stales as usual.

3d, 8 A.M.—He looks worse, and is evidently sinking. He has been standing up a great part of the night, and is so now. The pulse is not to be felt at the jaw, but distinctly so at the heart, and is there the same as last night, viz. 120. The respiration accelerated: he does not seem in pain, nor has he exactly the symptoms of enteritis. The bowels are not acting: his mouth, and the hand that has been placed in his mouth, has a peculiar smell, something like carious bone. I have occasionally noticed this smell in the latter stages of enteritis. I see no probability of his recovery.

8½ A.M.—He was found dead.

POST-MORTEM EXAMINATION.—This was made by me as soon as possible after death, and I examined very minutely, in order to discover, if possible, the cause of the spasm.

The panniculus carnosus, covering the part on the left side under which the spasm seemed principally to be, was discoloured with dark blood, but which might have been produced by injury, as he was found dead on that side, or from lying on it after death: this bloody hue, however, did not extend any deeper. There was a slight effusion of serum in the abdomen, on cutting into which the cæcum presented itself of a very dark colour and much diseased. The stomach was healthy, and moderately distended with gruel, in which was found the ball that had been given at three o'clock the afternoon before, and not the least dissolved, and with the paper still on it. The small intestines contained scarcely any thing except an increase of mucus. The cæcum was highly diseased—its inner coat, especially at its apex, was of a dark hue, and was covered with a thin layer of extravasated blood: the remainder of the large intestines were very slightly discoloured. The cæcum contained principally fluid, and the colon soft fæces: the fæces in the rectum were more dry, but not hard. The liver was far from healthy, being of a clay colour. The spleen and omentum were beautifully healthy. The peritoneum healthy, and having no appearance of inflammation. In the diaphragm I could not detect the least vestige of disease, or any thing different to what I had been accustomed to meet with in other cases. I took it home, and dissected, in several places, the peritoneum of it: there was not the least extravasation of any sort, but its fibres were beautifully red, corrugated, and distinct: its crura were also natural. The mediastinum attached to and that in the neighbourhood of the pericardium was partially covered with spots of ecchymosis. The pericardium did not contain more serum than is naturally found—its apex, externally, was thickly ecchymosed. The heart was normal. The phrenic nerve, in several places, before arriving at the diaphragm, was ecchymosed within its texture rather extensively.

CASE III.—25th Aug. 1826.—About nine A.M., I was sent for to see a pony that was ill.

Symptoms.—Spasm of the diaphragm on the near side, and which is synchronous with the pulse: breathes in a catching manner, as she takes four, five, or six small inspirations to fill the lungs, but she expires tolerably easily, and with scarcely any of the spasmodic action being perceptible. Respiration but little increased—pulse 60. Legs and ears warm—mouth hot—appetite lost—eyes inflamed, especially on the near side, and she

is dull:—abdomen distended a little—stands perfectly still, and does not express the least pain, but looks about her nearly as usual. She is excessively fat, and had been out a few miles yesterday evening, and seemed then to be quite well, but the man said that she did not seem inclined to eat much that night; indeed, the man did not take the least notice of her present condition, as the owner accidentally found it out, and sent for me. V. S. ad fbvj , and $\text{R pot. nit. cum aloes Barb. zivss}$, and to have bran mash and warm water.

6 and 8 P.M.—About the same, and not much relieved.

26th, 8 A.M.—No better. Physic beginning to operate a little—all symptoms about the same. I now took about four quarts more blood from her, which relieved her a good deal.

6 P.M.—Symptoms as at first. She dunged scarcely any thing all day. Gave small doses of aloes ant. p. t. fol. digital. et resinæ.

8 P.M.—Nearly the same. The ball has nauseated only.

27th, 8 A.M.—Pulse 90, and small—bowels not opened—has urinated in the night—abdomen much distended—legs and ears warm. V. S. ad fbiv . Repeat pot. cum opii 3ss . Blister each side of thorax.

6 P.M.—Respiration nearly natural: the spasmodic action has gradually subsided, and the pulse has also become more natural:—legs and ears warm, and she appears evidently much better—is thirsty, but will not eat—drinks gruel. Give 3ij aloes, 3j digital., 3j colchici antim. et ol. menth. pip. guttæ x, and repeat the blister, the other not having risen.

28th, 8 A.M.—Worse. Pulse 100, and feeble—legs and ears cold—looks dull and heavy, and will hardly move about: has not dunged yet—abdomen tense. Repeat mist. aper., and give aperient clysters.

11 A.M.—On my arrival, I found she had died a short time before, and for the last half hour prior to her death she was in a great deal of pain, and rolled and tumbled about a good deal.

Examination.—The whole of the intestines were much distended with water, and some food interspersed in it—the colon was very full, and a little inflamed. The whole of the intestines were slit open, and there was not the least mechanical obstruction or inflammation, except as above, throughout their whole track, and what was in them was perfectly soft. The bladder was empty—the heart was very much loaded with adeps, dark coloured, and very tender:—no effusion in the pericardium. The lungs were inflamed, but the lobes on one side, I forget which, much more so than the other, and congested with dark blood, but they were not in any way considerably diseased. The flanks were several inches thick of fat.

Observations.—In my note book I find this case is headed as “Inflammation of the Heart and Lungs, and Distention of the Bowels;” but now I have not the least doubt that it was a case of spasm of the diaphragm, and what I then took for violent beating of the heart was spasm of the diaphragm. From the commencement of the disease to within half an hour of her death there was not the least uneasiness, nor did she so much as lift up her legs expressive of pain. Her respiration was but little increased in frequency.

General Observations.—From the foregoing cases and the one that I sent you, and which is inserted in the last volume of *THE VETERINARIAN*, page 518, and from some others, I am led to believe that there is some connexion between the spasm and the heart’s action; for in these cases, although they did not beat exactly at the same time, yet they beat regularly after each other.

Mr. Castley says that the action of the heart was felt but very indistinctly, and not at all at the jaw; but that, after bleeding, both the spasm and the pulse increased in frequency.

Mr. Brown, see *VETERINARIAN*, vol. vi, page 18, does not notice whether the spasm and the pulse were together or otherwise.

In *THE VETERINARIAN*, vol. vi, page 50, is a case by M. Leverat, of Lausanne, of “Irregularity in the Beating of the Heart;” but which, I think, is a clear case of spasm of the diaphragm. Here he observes that the pulsations (*query*, spasm of the diaphragm) of the heart and the glosso-facial artery was 50 in a minute and synchronous; and further on he observes, that as the spasms diminished in number, so did the pulse at the face.

In Mr. Sinclair’s case, see *VETERINARIAN*, vol. viii, page 83, he says the spasm and the pulse were not synchronous.

Mr. Tombs, of Pershore, has related three interesting cases, see *VETERINARIAN*, vol. viii, page 494, and vol. xii, page 680, but does not notice this point.

In *THE VETERINARIAN*, vol. ix, page 513, Mr. Gutteridge, then of Caermarthen, afterwards, I fancy, of Ross, states a case, but he does not notice this circumstance; yet in one place he states that she was worse, and that the pulse had risen to 100 and the beating was more violent. Mr. Gutteridge’s case is badly reported, and the language singularly resembles that which may be found in a case of Mr. Brown’s, of Melton Mowbray, in the sixth volume of *THE VETERINARIAN*, page 18.

In *THE VETERINARIAN*, vol. xiv, page 368, there is a case, by M. Pasteur, “of Abnormal Palpitation of the Heart,” but

which, as Mr. Beeson, of Amersham, has observed, that gentleman did not seem to understand, for it was clearly a case of spasm of the diaphragm. Here the pulse was 60 in a minute, and isochronous with the beating of the heart (spasm of the diaphragm).

In the 15th vol. of *THE VETERINARIAN*, page 66, there are, by Mr. Beeson, some very interesting and concise observations on this subject; and, after noticing the error that M. Pasteur had fallen into, he says, "it is a remarkable fact, that in every case of spasm of the diaphragm that has come under my observation, the pulsations of the heart and the spasmodic beatings have been exactly isochronous. The spasmodic contractions always precede the heart's pulsation at about the same rate as the pulsation of the heart precedes that of an extreme artery, which may be distinctly felt, by placing the left hand at the heart, and the right one at the ends of the ribs."

In the same volume, page 500, Mr. Allison, of Washington, relates a case where, by putting his finger on the pulse and his eye on the flank, he found that the spasm preceded the pulsation a little, each keeping quite regular at its respective distance.

From the relation of these thirteen cases, it appears that in six of them the spasm and the pulse beat the same number of times in a minute—not at the same time, but immediately after each other, and with great regularity; in addition to which, Mr. Beeson observes that, in all the cases he ever saw, the pulse and spasm were regular after each other; in two of the other cases it may be implied that it was so. In three of them it is not at all noticed, and in only one of them (Mr. Sinclair's) was it not synchronous. Now, the question is, why should the pulse and spasm be of an equal number? Are they cause and effect?

On what side is the Spasm?—Another peculiarity is that of the spasm being generally on the near side; for out of sixteen cases that are reported, twelve have been on the near side, one on both sides, and in three the sides have not been stated. Mr. Beeson says he has seen it in several cases, where the whole of the diaphragm has been implicated, but more violent on one side than the other. Now it is highly probable that in these it was "more violent" on the *near* side. In a case of Mr. Tombs's the spasm extended to the intercostal and abdominal muscles, as well as to the diaphragm; but it only lasted in all of them for a few minutes.

Pulse.—There appears to have been in these cases a difference in the state of the pulse. In many of them it was, at the jaw, almost imperceptible, and at the heart sometimes not to be felt, at others indistinct, and sometimes only a sort of echo, whilst

in a few others it was natural and regular. In most it was from 40 to 60 in a minute. After several of them had been bled, both the pulse and the spasm increased in frequency, but subsided, generally, shortly afterwards; and repeatedly I have observed that whatever increased the pulse, increased in the same ratio the spasm, thus shewing the great connexion between the circulatory system and the spasm of the diaphragm.

Length of Time the Spasm existed.—Out of sixteen cases, one lasted only for a few minutes; two, from seven to eight hours; two, about fifteen hours; two, eighteen hours; four, two days; four, from two to three days; and one, four days.

In what Breed.—It appears that most of the horses that have been subject to spasm have been either thorough or half-bred; and I am not aware that there is a single case on record in English works of a cart-horse being so. One case, from a foreign Journal, is mentioned as being “a draught-horse;” but as he was drawing a cabriolet, I do not think he was what we mean by a cart-horse. Four or five have been small ponies.

Age.—From a yearling up to twenty years of age; but in some their ages have not been stated.

Cause.—As naturally would be supposed, many of these cases are brought on whilst hunting, running in coaches, or any thing that causes great exertion or increased respiration: but it is also very certain that quite as many are caused by or dependent upon some irritation either in the stomach or intestines, or both: but, what is a little curious, the spasm does not generally come on while the horse manifests the greatest pain by pawing or rolling about, but usually when these active symptoms are on the decline, as if some metastasis takes place from those parts to the diaphragm, though I am inclined to believe that there is still some irritation going on there, but not of so painful a nature. Several of these cases have *originated* (but before the spasm commenced) from gastritis, in consequence of the animal having eaten a quantity of oats; others have been found ill in the fields with spasm of the bowels, or with gastro-enteritis, and have continued ill for a length of time before exciting the spasm. Some cases of spasm of the diaphragm originate without any apparent cause; but I am inclined to think it is generally brought on from some sympathy existing between the stomach and intestines, as was clearly so in the case I have mentioned, while the horse was standing still in the stable, but labouring under the effects of a strong dose of croton seeds. It has also existed whilst a horse had an ulcerated jejunum, supposed to have been caused by worms. It has likewise been observed in a solitary case of intussusception of the intestines.

Post-mortem Appearances.—Out of eighteen cases, six have died, and the following were the post-mortem appearances :—

One of Mr. Brown's was not opened by him, but he was informed that the viscera were quite healthy.

In another, where the horse had taken a severe leap in hunting, the diaphragm was found to be pale and flabby, and the intestines free from inflammation. His bowels had not been opened, although an immense quantity of purging medicine had been given. The bloodvessels of the psoæ muscles were ruptured, and a small quantity of coagulated blood found there. Query : May this have extended to the crura of the diaphragm ?

In one case, where it was seen only for a short time, the colt died of ulcerated intestine, and had been sadly troubled with a large quantity of (easily found) tape-worms.

In another case, *vide* THE VETERINARIAN, vol. xiv, p. 625, considered by the author to be "inflammation of the diaphragm," there was spasm of it, of which she appeared to get well ; but on one day she was ridden out gently, and on her return she devoured a quantity of hay and corn, and shortly afterwards fell down and died. On examination, the same day, the diaphragm was found to be ruptured, and the muscular portion "softer and less solid than is natural, and of a dirty whitish red colour ; the stomach full of undigested food, and distended with gas, and, on its internal surface, a gangrenous spot, and slightly inflamed." The sudden falling down was considered to be the cause of the rupture.

In another of the fatal cases there was intorsusception of the bowels. And in the sixth case there was no disease of the diaphragm, but there was inflammation of some of the large intestines. Mr. Beeson says he never saw any die but what were symptomatic cases.

When most visible.—In all cases that I have seen, the spasm has been decidedly more visible during *inspiration*, and less and less so as the expiration terminated, until at last it is quite invisible. This circumstance may explain why some have said the spasm and pulse were not synchronous.

Cause of the external Beating, &c.—If, from over-exertion in the chase, or otherwise, or from sympathy existing between the stomach or intestines, or from disease of the phrenic nerve, the diaphragm becomes unduly irritated, then, instead of that gradual and regular contraction of its fibres, as in ordinary inspirations, it becomes spasmodically affected, whereby the thorax is suddenly and partially dilated, forming, if I may be allowed the expression, a vacuum in the chest ; to fill up which the air, from the pressure from without, immediately and forcibly rushes into

the lungs, giving that force or beating against the ribs, diaphragm, and flanks, that is generally seen and felt, and which often shakes the whole frame.

Why it is generally seen only on the near side, I fancy, must be in consequence of spasm only existing usually on one side, and, as the one side is only suddenly dilated, so does the air rush in in a great measure to that side. Why the spasm should be chiefly on the near side I cannot exactly imagine, unless it is from the greater contiguity of the stomach, it lying chiefly against the diaphragm on that side. During a quick pace the diaphragm may be irritated by the stomach, if the latter should be in a state of great distention, as the former would not have, probably, its free action, although one of its crura is shorter on this side, in order to make more room for the stomach. In some cases the spasm comes on without scarcely any increase of respiration ; but yet, probably, and under some peculiar unknown circumstances, the stomach or intestines may sympathise with and irritate the diaphragm.

A question may be asked, why should the pulse beat so regularly before or after the spasm of the diaphragm? It would seem almost as if the heart was first acted on, through which the diaphragm becomes spasmodically affected ; or, on the contrary, the spasm may produce the regularity in the heart's action. At any rate, we often see that there is great connexion between the circulatory and respiratory system, and that when one is increased the other is often so : but these are points that I must leave for a more leisure hour to think over, or to some wiser physiologist than myself to explain.

Probably some of those who have recorded cases, have, since that time, thought a little on the subject, and will favour us with their remarks.

To one great sporting writer, the justly celebrated Nimrod, are we indebted for the fact of having first noticed and laid before the public these rather rare and interesting cases, and who, I have no doubt, after a lapse of seventeen years, will again be able to afford us, out of his inexhaustible mine, other facts and observations on the subject.

I should be particularly obliged if some of our medical friends would inform us whether any similar affection exists in the human subject.

To those who have not yet purchased "The Horse and the Hound," by Nimrod, I would strongly recommend them to do so, as a more interesting work I have not laid my hands on for some time. I have been monthly expecting to see a review of it in your journal.

CONSULTATIONS.

No. XXVII.

THE EFFECT OF A POOR AND SANDY SOIL ON THE
IMPOVERISHMENT AND DEATH OF CATTLE.

A TENANT on this island—Iona—has lost, during the last eighteen months, six cows and one horse, apparently from the same cause, and has at present a cow very ill. He requests me to write you a statement of the case, and to ask your opinion as to what you would advise, as to the treatment to be adopted as a preventive, or in case of other animals being similarly seized.

At first the cow is observed to be languid, and to eat and drink little. The fæces hard, lumpy, and dry. Latterly she refuses both meat and drink, and, after lingering for some time, dies. On examination, the stomach is found very much distended with sand, and mixed with undigested food. All the other organs are apparently healthy.

The treatment generally adopted has been large doses of Epsom salts and cod-liver oil, and this last case has had, in addition, castor and croton oil; but the bowels are scarcely moved, and the fæces still hard, inclined to be dry.

The soil of the island is, in general, sandy, and the pasture bare, but good. It is divided into small crofts, and each tenant can keep only from five to eight cows at the most.

I may mention, that the other tenants are also, every now and then, losing a cow from the same cause, but more frequently the occupants of the west end, which is the most sandy soil.

The tenants have more than once applied to me, in the absence of any veterinary surgeon, but I have told them that I am perfectly ignorant of the diseases or treatment of cattle.

I remain, dear Sir, your's, &c.

Professor Dick,
Edinburgh.

Reply to the foregoing Letter, by PROFESSOR DICK.

It appears to me that the disease in the cows in your island arises entirely from the causes you mention, viz. the bareness of the pasture and the sandy nature of the soil. The bareness of the pasture renders it almost impossible for the cows to gather up

their food without having it mixed with a portion of sand, which, being indigestible and heavier than the particles of food, will gravitate to the most dependent part of the stomach, and there accumulate. I have known it, in similar situations and soils, occurring both in horses and cattle.

In some cases, however, I must observe that animals have swallowed sand or earth apparently from acidity in the stomach. In such cases these matters have been eaten up greedily, and an accumulation, of course, has taken place rapidly. The animal, in these cases, becomes unthrifty in its coat, and takes to licking earth with his tongue, or it eats lime from a wall, or commences to eat the filth which may have gathered on the wood of the stall, or among his feet under the litter. The remedies, in such cases, are a dose of physic and the alkali. Now it is possible that such may be the cause in the cases you mention; but I scarcely think so, and would rather refer it to the soil.

I am afraid that the means of prevention are not within reach, viz. a more solid surface and more luxuriant pasture. These might, perhaps, be obtained, if it were possible, to give a good top dressing to the pasture either of clay, good soil, or good manure, so as either to consolidate the surface, or produce a more abundant growth of grass, and give them a better bite, in which case they would naturally avoid the sand; but as these means are probably not within reach, I should advise those farmers who are most troubled with the disease to give occasionally a good dose of common salt (muriate of soda), say 1 lb. at a time in half a gallon of water, repeating it once a fortnight during the season in which the disease generally prevails, with plenty of water to drink. When the animal shews symptoms of disease, I would advise 1 lb. of linseed oil and 10 drops of croton oil as a dose; and if this does not take effect, repeat the dose every twelve hours, or try the common salt in twelve hours—1 lb of it, and 10 croton beans: in short, repeat the purgatives until the bowels are opened, for you need not fear to give too much. It is, however, well to change the medicine occasionally, oil, salt, Epsom salts, and croton, with plenty of water or gruel. By these means I think you may succeed; but from the inert nature of the mass it is very difficult to remove by medicine; and then the only means of cure left in these cases is to make a free incision into the paunch, and to extract the contents with the hand. And although this appears a formidable operation, it is by no means so dangerous as might be supposed, and is very commonly accomplished with success. The wound should be closed carefully, and care taken not to allow any of the contents to pass into the cavity of the peritoneum, which might give rise to inflammation of that membrane. This is easily avoided with ordinary care.

L I T H O T O M Y.

By Mr. FIELD.

AN aged grey gelding (having been ridden at the battle of Waterloo), the property of Mr. H——, was brought to my infirmary on the 15th September, 1842, the owner complaining that during his ride he would constantly stop and stale.

There were present the following symptoms, viz.: straddling gait; stiffness in the movements of the loins; frequently passing small quantities of urine, at times turbid and bloody; occasional expression of uneasiness, but no colicky pains. The horse was in good condition—that is, fat.

Suspecting stone in the bladder, I proceeded to examination *per rectum*, and very soon plainly felt a calculus of considerable size, and, besides that, apparently a smaller one.

Having informed the owner of my patient of the state of his case, and acquainted him with the nature of the operation of lithotomy as the only remedy, and at the same time having intimated to him that it was one never unattended with danger, and that the risk, in the present instance, was considerably increased by the great age of the horse, I received from him, notwithstanding, instructions, at all hazards, to undertake the operation.

The 20th of September last was the day fixed on for its performance, on which occasion I was kindly assisted by my friend Mr. Percivall. While the animal remained standing, Mr. Percivall and myself both distinctly felt through the rectum one large calculus, and a smaller substance which appeared to be one of a softer kind, the lesser production being by no means so characterizable as the larger. The horse was now cast in the ordinary manner, turned upon his back, and supported in that position by trusses of straw. The off hind leg was, with a side line, partially drawn forwards, so as not to overstrain it, lest in any struggle the spine might, in so aged a subject, give way: the remaining three legs were kept steady in their elevated position by ropes running through rings held by assistants.

Having after some effort drawn the penis out of its sheath, and having firmly grasped it, I passed my straight metallic staff (larger, perhaps, than any commonly made use of), and pushed it onwards, until, with my other hand, I felt its blunt curved end protruding in the perineum. Elevating the staff, and the penis along with it, as much as the urethra would allow of, I committed both to the charge of an assistant, with strict injunctions that he held them firmly and steadily, and that he kept the end of the staff pressed home against the perineum. This enabled me to

feel the groove of the staff through the skin, and readily to cut down upon it : by extending my incision I was able to introduce at once my straight pair of forceps, and subsequently to pass them into the bladder. After searching about with the introduced ends of the forceps, and opening and shutting them some few times, I succeeded in clutching the calculus, and was using the force necessary for its extraction, when, being of a soft fragile nature, it gave way under the gripe of the instrument, and broke into pieces—fragments I may say, for but few of them were large—of which three, each the size of a walnut, were one by one removed ; the remaining particles being, for the most part, washed out by a copious stream of tepid water thrown into the bladder by means of Read's syringe through a tube introduced in the place of the forceps, which had, of course, been withdrawn. The fracture of the stone into so many pieces, and the consequent difficulty there was in finding and grasping even its larger divisions, protracted the operation much beyond the time it otherwise would have occupied, rendering it both tedious to the operator and harassing to the patient.

On the horse rising from the bed, he walked to his box with apparent ease. Two hours afterwards he exhibited pain by pawing, which, after administering an anodyne draught and abstracting a small quantity of blood, was removed. At the time of staling, the water passed through the opening as well as through the urethra.

The case proceeded favourably until the 25th September, when a considerable swelling took place, which commenced from the point of the shoulders, running on either side of the back to the tail, which was accompanied by much stiffness in motion and by great pain upon pressure. It was found necessary to bleed him again ; some opening medicine was given, and cold evaporating lotions were constantly applied to the parts. By persevering in this plan of treatment for a few days, the enlargement, the stiffness, and the pain, gradually subsided. No other unpleasant symptom occurred, and on the 30th September the wound entirely healed. The horse is now perfectly recovered from the operation, but I am of opinion he is liable to a recurrence of the disease.

A CASE OF HEPATIRRHŒA.

By Mr. E. A. FRIEND, Walsall.

THE VETERINARIAN for September contained a case of hepatirrhœa, from Mr. Spooner, of Southampton; and as I always feel great interest in his communications, I at once turned to it, and felt much pleased with his clear and concise statement of facts. I now send you a companion to it, and hope that some valuable practical application may arise out of the recollection of these on the recurrence of any similar case to another practitioner.

Some two or three years ago, I was called upon in great haste to attend a horse belonging to W. Cotterill, Esq., of this place, that had been purchased a few weeks previously at Bindley's Repository, Birmingham, at a sale of some of Mr. E. Peel's horses there. He was a magnificent hunter, but very impetuous. I found him apparently in considerable pain, with distended nostrils, laborious respiration, and the pulsation of the heart very quick and audible. To alleviate these symptoms I proceeded to bleed him, but had not abstracted more than a pint before I desisted, and sent the groom into the house to tell his master that if he wished to see his horse again alive he must come immediately, as he had not many minutes remaining. When he came, I said, "I have killed your horse; at least, I have accelerated his death. My opinion is, that there is internal hemorrhage, and that he will die immediately." He did so in less than five minutes. He had been hunted the day before with some harriers, and had been ridden (in the true spirit of larking) over several rasping fences, which he had done in an extraordinary manner.

The post-mortem examination was remarkable merely from the appearance of the liver: it varied only from that described by Mr. Spooner in the circumstance that, in this case, not one-fifth portion of that viscus was left; the rest had become absorbed, and the formerly investing membrane was distended to an enormous extent, with firmly coagulated blood. There was now rupture of this membrane, and the hemorrhage into the cavity of the abdomen had produced death. He had appeared in perfect health up to that time, and I attribute the rupture to the great exertions of the previous day.

Like Mr. Spooner, in his case, I was of opinion that the original lesions were of long standing, and fortunately I had an opportunity (I think) of proving the correctness of this opinion. I was on a visit a short time afterwards to Mr. Robinson, of Tamworth, and, in the course of conversation, asked him if he

recollected Dispatch, a horse of Mr. Peel's sold at Bindley's. "Perfectly well," was the reply. "Did you ever attend him for any complaint?" "Yes." "Of what kind?" "Disease of the liver." "How long is that since?" "About a year and a half or two years." This appeared to me quite confirmatory of my previous opinion, particularly as Mr. R. had never lost sight of him from that time to that of his sale at Bindley's, and I had seen him almost daily from that time to his death. I can speak very positively as to his high spirit, for I once gave him a gallop on our race course in a snaffle bridle, and he carried me off the course through a part of the town, and a considerable distance along a turnpike road, before I could get a pull at him, and this, too, without the slightest respect to my inclination in the matter.

Now, the consideration of these two cases, so similar in many respects, seems to establish the important fact, that, with excessive decay of the liver, a display of perfect health may be apparent, and that the energy necessary to perform laborious duties may be exhibited. The application to be made would be a careful and minute investigation of other viscera, in order to ascertain whether any unnatural or extended function had been performed by them to supply the loss of power sustained by the liver in its impaired and impeded state. I frankly confess that, at the time, I did not direct my attention to this important subject, as I might have done if I had previously seen an account of a similar case, or as it is probable that Mr. Spooner would have done if he had previously read an account of mine. I regret now that I did not send it to *THE VETERINARIAN* at the time it occurred; but I sincerely hope that it will not be lost sight of.

Your's truly, &c.

A CASE OF DISLOCATION OF THE STIFLE JOINT.

By E. GABRIEL, Esq., M.R.C.S. et V.S., London.

ON the 14th of November 1842, I was requested to visit a young bay horse that had just met with an accident. He belonged to a coach proprietor, and had been taken out to shew for sale. On running up the yard the third or fourth time, being very fresh, he lashed out with both hind legs, and on coming to the ground his off foot slipped—the limb flew behind him, and he came down on the front of the stifle and fetlock joints, slightly lacerating the skin of both: on recovering himself, he could not put his foot on the ground.

Within ten minutes I saw him. The limb was then semi-flexed and shortened from six to eight inches, the point of the toe hanging parallel with the fetlock joint of the other leg. He was very stiff, and a swelling, one-half the size of a man's head, had become suddenly developed on the outside of and rather below the stifle joint, accompanied with excessive tension and rigidity of the muscles, fasciæ, and integument of the part. On examination, the limb could be flexed or extended on the hip joint, but to a very limited degree, and producing great pain.

A suspicion of the nature of the accident was the first thought that glanced across my mind: the second was, a dislocation of the patella, a case I had never met with, but with which, through Mr. Percivall's graphic cases in *THE VETERINARIAN*, I felt quite familiar.

This, however, would not account for the immense swelling, although it might for the fixed state of the limb. However, as being the nearest approximation to the state of the case, and as the mode of reduction must be somewhat similar in both, I had recourse to that described by him.

The limb was extended as close to the abdomen as possible, but no patella could I feel to slip into its place; and, after two or three attempts, which occasioned great pain to the animal, I desisted; and, the owner being out of town, I determined on leaving the case until the morning, by which time my first impression would either be confirmed or disproved; and having, by way of a placebo, ordered fomentations to the part, and preparation for a dose of physic, I left him for the night.

The next morning I found the case in *statu quo*. The animal was lying down on the near side, the off hind leg remaining in the same semi-flexed shortened state as when up, and, on making him rise, it continued so.

I was now, therefore, satisfied that it was a case of dislocation of the stifle joint; I consequently ordered the hobbles to be put on, had him thrown, and proceeded to the reduction.

The limb was freed and an extra hobble placed on it, and three men were ordered to pull steadily and firmly forward in an oblique direction towards the fetlock joints of the fore legs, while I applied all the pressure I could effect on the swelling produced by the dislocated extremity of the femur, which was lying on the outside of the tibia.

Five minutes effected the object; and on freeing the limb the swelling had entirely disappeared. The bone was reduced to its natural position, and the leg was the same length as the other.

When loose he quietly got on his legs, stretched himself out, staled freely, and was at once considerably relieved. The stiff-

ness and pain, however, remained so much that he walked very lame, and scarcely moved during the following day and night. Cold lotions, a dose of physic, and a loose box, completed the cure. The lameness gradually lessened; and at the end of a fortnight, on taking him into the yard, it was not perceptible in his walk, and but slightly so in trotting.

I send this report merely on account of its novelty, and, most assuredly, not because it reflects any credit on myself. Should I ever meet with another such case, the reduction shall be effected immediately after the accident; but the fact is, I had never seen such a case before, and had never read of such an one. I had never even heard of such a case before; nay, I am tolerably certain some one has said somewhere that there never was such a case as that of dislocation of the large joints; and, therefore, as there never has been, although it does not of necessity follow that there never should be such a case, yet, as the chances were certainly against its occurring at all, and still greater against its occurring in my own individual practice, and in that particular yard in which it did happen, I certainly had not been keeping any very sharp look out for it, and, consequently, was quite taken a-back instead of going a-head, and putting it to rights immediately—as you ought to have done, doubtless, will exclaim many, who, like the friends of the discoverer of the fourth continent, ridiculed the idea of there being any difficulty in making an egg stand on end *after* having seen it first broken. These, however, are the only extenuating circumstances I have to advance in palliation of my not jumping at a conclusion; and those who do not think them satisfactory, must even substitute better should they ever get (improbable idea!) professionally puzzled.

THE ANCIENT HISTORY OF THE OX.

By Mr. W. F. KARKEEK, V.S., Truro.

[Continued from vol. xv, page 312.]

HAVING, in two previous papers on the “Ancient History of the Ox,” confined our attention chiefly to his geological history, from which we learn that, at a period incalculably remote, he existed on our island in quite a different zoology from the present one, we will now proceed briefly to consider some points in his history since the creation of man and the establishment of the present order of things, which we are taught by revelation and by natural records took place about 6000 years since.

It is generally considered by natural historians, that the do-

mestication of the ox took place in Western Asia, by the Caucasian nations, a people that inhabited a country situated between the Caspian and the Black Sea; and thence, as from a central point, the different branches of this variety shot forth like the radii of a circle, whence have sprung the most civilized nations of the world, and such as have most generally exercised dominion over the rest of mankind.

The immense advantage derived from the domestication of the ox, in the beginning of human civilization, may be gathered from the conspicuous part which his name and attributes perform in the early history of mankind. We find the bull among the signs of the zodiac, and it typifies the Sun in more than one system of mythology; the supreme power in Jupiter among the Greeks and Romans; the strength of war with Mars; and the sinews of commerce with Mercury. He was personally worshipped by the Egyptians, and held, therefore, sacred and revered as a deity. One instance of this was at Memphis, where they worshipped the sacred bull Apis; and another was to be found at Heliopolis, where they held the bull Mnevis, or Mneuis, in equal veneration. Diodorus speaks of the honour in which these animals were held as being equal to that paid to the gods; and they are said to have had this regard paid to them as living emblems of Osiris, the father of mankind, and designed as memorials of the fruits of the earth being propagated by their means, and of the persons to whom the world was indebted for those blessings, that the remembrance of so great benefactions might last to the latest generations.

But not only was the bull held in reverence by these ancient people: the cow and the calf were equally venerated. In the book of Tobit, complaint is made against the apostate tribes in Israel, who all sacrificed to the goddess Baol, represented by an heifer. When the Israelites fell into the idolatry of Egypt, they worshipped a calf on Horeb; and when the folly was renewed under Jeroboam, still the object of worship was the same. It appears that it was not every bull that was so eminently distinguished by the Egyptians; there was a particular breed of this animal, having certain characteristic marks, the principal one being the lunar emblem upon the side, which the people in Egypt told Plutarch was effected *επαφη της Σεληνης*, by a touch of the moon, which he understands by this planet. The particular shape of the horns was also another characteristic of the sacred Apis: the horns bore some resemblance to a lunette, which was very probably an emblem of the ark. We find most of the arkite divinities distinguished either with a crescent or with horns. The bull of Europa is described as having his horns full budded,

and bearing a resemblance to the new moon. “*Ἰσα δ’ ἐπ’ ἀλλήλοισι
 νερα ἀνετέλλε καρήνην Ἀντύροσ, ἡμιτομοῦ κερᾶς ἅτε κυκλα
 Σελήνης.*” The colours of these sacred animals were varied :
 one of them is black, with a row of singular white streaks de-
 scending irregularly down the neck ; another is entirely white ; a
 third white, with a double oval lengthened ring on the flank ;
 and a fourth, partly covered by drapery, is rufous. To pursue
 this inquiry would scarcely have deserved attention, but that it
 indicates the value which some of the primitive nations set on
 this inestimable animal, enabling them, as it undoubtedly did,
 to till the ground ; and being, therefore, a direct cause of private
 territorial property, and of its consequences, wealth, commerce,
 and civilization, it was venerated and respected accordingly.

It is our intention in this, and in a future number of *THE
 VETERINARIAN*, to consider the original character of our native
 breed of cattle, their progressive improvement, and attendant
 circumstances, with some brief notice of our present stock ; and
 here we would mention, at the threshold, as it were, of our paper,
 that, until our attention was directed particularly to the subject,
 we were totally unaware that the historical account of our breeds
 was so meagre and imperfect.

We know very little respecting the early history of our ances-
 tors previous to the Roman invasion. Most ancient writers agree
 that England was peopled from the continent, and that the first
 inhabitants derived their origin from the Celtæ or Gauls, who
 were settled on the opposite coast of France. The propinquity
 of Britain, which was discernible from several parts of their own
 coast, must have presented an inviting opportunity, even in the
 infancy of navigation, of transporting themselves into the island
 with little difficulty. Here the new settlers evidently found cattle
 in abundance, and, retiring to the inland parts, led a life of pastoral
 simplicity, like that of their brethren in Gaul, unmolested by inva-
 sion from abroad or disquietude at home. The hides of their cattle,
 we are informed, were one of the principal articles of commerce
 with their neighbours, which were applied to various purposes,
 such as forming articles of dress in particular.

Their boats or canoes (according to Lucan) were built of osiers,
 covered with hides, which served them for short coasting voyages.

Primum cana salix modefacto vimine parvam
 Textitur in puppim, cæsoque induta juvenco,
 Vectoris patiens, tumidum super emicat animum :
 Sic venetus stagnante pado, fusoque Britannus
 Navigat oceano.

“ The bending willow into barks they twine,
 Then line the work with spoils of slaughter’d kine ;

Such are the floats Venetian sisters knew,
Where, in dull marshes, stands the settling Po;
On such to neighbouring Gaul, allur'd by gain,
The bolder Britons cross'd the swelling main."

The diet of the inland Britons consisted principally of the flesh of their cattle, apples, bread, and milk; and their favourite drink was metheglin or mead, a fermented liquor, composed of barley, apples, and honey. Though they had cattle in abundance, they were unacquainted with the art of making cheese; and though their sheep were enriched with the finest fleeces, they never sheared their wool.

At first it may easily be imagined that the ox was used as a beast of burden; but, the chief strength of the ox lying not in his back, accident or judgment must have soon led to the discovery that he was capable of drawing heavy weights; and it is generally supposed that this was first accomplished by attaching thongs of hide leather to the horns, at the ends of which a kind of sledge was fixed. Our ancestors, when Cæsar landed, were better acquainted with the value of their cattle than this, since we are informed that the land was partially cultivated; an operation which could not have been accomplished until those bulky animals had been subdued to the purposes of man.

After the Romans had finally given up the island, its inhabitants were harassed considerably by their neighbours, the Scots and Picts, which occasioned them to invite the assistance of the Saxons, who soon turned out to be more formidable enemies than their old ones; for, after a violent contest of nearly one hundred and fifty years, with the exception of Wales, Devon, and Cornwall, where the inhabitants had fled for safety and protection into the remote or inaccessible mountains of these countries, the whole of the country was subdued, and its inhabitants, language, customs, and political and religious institutions, completely destroyed. It was in this manner that the old native breed of cattle was preserved in these districts; for the refugees naturally took with them their oxen, sheep, and horses, which constituted at that time their principal property; and a single glance at the breeds of cattle established in these places shews, even at the present day, that they were originally from one stock,—the differences observed in their colour, size, and other qualities, being the natural consequence of alteration of climate, soil, and manner of living. It is upon the supplies of food that the size and strength of those animals chiefly depend. When food is supplied in abundance, the ox becomes enlarged in bulk; and when food is deficient, whatever be the nature of the climate, his size and strength become less: thus, the Barbary ox is as diminutive as those of the Ork-

neys, because the grasses, his natural food, are burned up during a great part of the year, leaving plants for him to subsist upon as innutritious as the heaths of the northern isles. But where the grasses abound, and where the heat of the climate is not sufficiently great to wither them up during a greater part of the year, the ox assumes an entirely different character with respect to magnitude and strength. We shall have many opportunities of illustrating this well-known fact, when alluding to the history of the different breeds which diversify our soil.

A question which has already excited considerable attention naturally presents itself here:—What were the particular characters of the breed of cattle which Cæsar found on visiting our shores? By some it has been conjectured that the original native breed of Britain was of a white colour, similar to those wild or feral breeds now preserved in some of the northern parks of England and in the south of Scotland, and formerly in Wales. We shall proceed to consider this question at some length.

In a work published about 240 years ago, by John Leslie, Bishop of Ross, it is stated that a wild and savage race of oxen, of a white colour, were found in the woods and forests of Scotland. Hector Boece also mentions the same circumstance, of their being found near London, and says that they were “*mair wild than ony oither beastis.*” The same author describing the bull of the white breed, says, he has “*a crisp and curland mane like feirs lions.*” Here is evidence sufficient to prove that cattle of this description were sometimes found in their time running wild in the woods and forests of merry England; but a very interesting question is here to be considered,—whether the wild race were descendants of the native aboriginal stock, or derived from a domestic race fortuitously escaped from servitude. We believe we shall be able to prove the latter position. In the reign of William the Conqueror, who is said to have possessed sixty-eight forests, besides chases and parks innumerable, we have accounts of the different wild animals of venery or chase, such as the hart, hind, buck, hare, boar, and wolf, but no mention whatever of wild cattle. In consequence of the unsettled life which many of our early and later ancestors led, their cattle would sometimes stray and be lost in the woods and forests, and consequently became wild, and sometimes ferocious, we have no doubt: besides, we have authentic accounts which prove that white cattle, similar to those now preserved in the north of England, were carefully treasured in the domains of monasteries and nobles as early as the reign of John, and that they were sought after even by princes and kings. These facts sufficiently prove that the white race were not common in those days, and, therefore, any of the breed that happened

to have been found wild in the days of Leslie and Boece could certainly have been only a few stray cattle from some gentleman's park or forest, and which, attracting attention in consequence of the colour, were chased by the woodmen and foresters, and hence became savage and ferocious. Mr. Youatt, in his admirable work on Cattle, says, alluding to this white breed, which were found in Wales about the tenth century, "According to an ancient document, a hundred white cows with red ears was demanded as a compensation for certain offences against the prince of North and South Wales. If the cattle were of a dark or black colour, 150 were to be presented." Here is a fact that the white breed were considered as a rare variety, and the same records that describe the white breed speaks also of the dark or black coloured breed which now exists, and which is general throughout the principality.

The white breed are now, we believe, extinct except in two or three places, those at Chillingham Park approaching nearest in their character to the ancient race. They are about the size of the West Highland breed, of a dun colour—the muzzles and the inside of the ears being of a reddish brown. They are wild, and extremely cautious of being approached, and when suddenly intruded upon they scamper off, and turn round as if to smell and examine the intruder, and generally gallop in circles, as if meditating an attack.

From some accounts which we have heard, the greatest care is required in order to preserve the peculiar characters of the race, since there exists a tendency to deviate from the colour and marking of their parents. Sometimes they become altogether black or altogether white, or have black ears instead of red ones. These are immediately destroyed by the keepers, so that it is impossible to ascertain what character they would assume if left to breed in a promiscuous way.

This is a striking example of the manner in which the characters of colour are preserved in any particular breed. The red colour of the Devons and the black colour of the Pembrokes shew the same effects of care and attention in breeding; and, in our opinion, this very fact which we have mentioned of the great care that is requisite to preserve the white race pure, proves that the breed is not the indigenous colour of the native stock which ran wild in its woods and glens before man inhabited its surface.

There are few places so well calculated for the preserving of this breed as Chillingham, as it lies in a solitary country; and such is the care taken to render this isolation as complete as possible, that there is not even a public house permitted in the

small hamlet adjoining the castle, which seems to exist just as the ancient dependent hamlet of the feudal castle did in the feudal times themselves. The castle is a fine fabric, in true castellated style, and well befitting the classic land of Northumberland. The region of Alnwick, Warkworth, and Chevy Chase, of the skirmishes of Douglas and Percy, of many an ancient cross, convent, battle-stone and hermit cell, lies embossed in its woods, at the foot of wild hills which ascend eastward for a mile or more, and terminate in a range of bare and craggy eminences of a fine woodland character. The steep slope between the castle and those heights is the park. Various woods and dells are scattered over it, so that the cattle can choose a high and airy pasture, and whence they can see afar off any approach—a situation they seem particularly to enjoy, as at the slightest alarm they can plunge into the depths of woods and glens.

The author of the article *Bos*, in the *British Cyclopædia*, is of opinion that the breed are not even descended from the aboriginal stock, but that they were domesticated oxen, which have run wild from a race originally imported by the ecclesiastics from Italy, where herds of wild cattle much resembling them still exist: but we can very easily prove that this race existed in our island for several centuries before Christianity became promulgated here, since they were employed by the Druids in their different processions and public sacrifices both in Wales and Cornwall. On the cutting of the sacred mistletoe, two white bulls were fastened by the horns to an oak. The arch-druid having ascended the tree in his consecrated white garments, with a golden pruning knife cropped the mistletoe; which, having secured, he descended the tree, and the bulls were sacrificed to invoke the Deity to bless the sacred plant, and render it efficacious in the different distempers for which it was usually employed. The history of Paganism in Italy also shews that they preserved a whole race for the same purpose as the British Druids, differing entirely from the common cattle of the country. We have already shewn that the Egyptians preserved a white breed, which they actually worshipped; and it can be also shewn that the Syrians, like the people of Mo-Memphis, held a white cow in great reverence. Other nations, where Paganism prevailed, followed the same practices—the Phœnicians and the people of Sicily, Cyprus, and Crete.

From these facts we are led to the conclusion, that the white breed of cattle, which at one time were found so plentiful in our country, are descended from the breed that was preserved with religious care by the Druids for their Pagan sacrifices. After Druidism became abolished, the same race were preserved for a long

time by the Catholic priests, in the woods belonging to the different monasteries ; but, on their dissolution, they became, like their protectors, dispersed, and, with only a few exceptions, where they happened to find protection in some noblemen's forests or parks, are nearly extinct.

A SINGULAR AFFECTION OF THE ŒSOPHAGUS AND JUGULAR IN A MARE, AND ALSO A CASE OF TUMOUR ON THE MEDULLA OBLONGATA OF A HORSE.

By Mr. FRANCIS KING, Jun., V.S., Stanmore.

A CASE or two of rather mysterious character having just terminated, I am induced to sketch you a history thereof, inasmuch as they tend to shew in what a field of conjecture a poor veterinarian occasionally finds himself.

CASE I.—Nov. 24th. A young and fine mare, belonging to a gentleman at Hendon, came in, with the statement that she was seized, after eating some carrot-tops, with violent coughing, and that it was expected she would have been choked—that the distress and agony were so great, that she threw herself violently about, and pawed with force enough to pull off one of her fore shoes. When brought in she was tolerably calm, but, though willing to eat and drink, she could not swallow any thing, it being returned through the nostrils, accompanied by some blood, which, however, soon ceased. It was said that the bleeding at first was considerable. The off side of the face and lips, including the ear, were paralysed, and an enlargement extending from below the throat up to the ear on that side presented itself.

An examination by the hand so far as it was possible afforded no satisfactory information. Trusting to what a little time might disclose, the glands of the throat and jaws on both sides were actively blistered, and that action kept up.

This state of things went on for two or three days, when, still finding that the animal could not swallow any thing, we attempted to pass the stomach tube (in the hope of getting some nourishment into her in that way); but we could not.

On the 29th, the swelling under the parotid was evidently diminished, and, by almost unceasing efforts to swallow (for the

first time), about three gallons of gruel in the course of the day were passed down.

30th.—Nearly the same; and although, while attempting to drink, a great quantity of gruel was continually returning through the nostrils, still she managed to swallow nearly as much as the day before.

From this time the paralysis increased, the eye becoming affected, and the lower lip more pendulous. She gradually became worse, and on the 5th she died.

Up to this period every thing was conjectural; but a post-mortem examination satisfactorily accounted for the symptoms, the immediate cause still remaining unexplained.

On examining the head, and removing the inferior maxillary, nothing more than ordinary was to be seen. The tongue, palate, larynx, &c. all looked healthy; but on removing the larynx and œsophagus together, I found a considerable quantity of coagulated blood situated immediately superior to the œsophagus, and which, I should think, at first must have been more than a pint. It had evidently been produced by the rupture of one division of the superior branch of the jugular. The coagulum was to so great an extent, that it had produced a great degree of pressure on the head of the œsophagus, and thus prevented its action; for, on examination, it lay as flat against the larynx as it was possible for it to do, and it was with difficulty that I could pass any thing through it. Being so compressed, it appeared as if, from the constant and violent exertion to remove the food—not being able to swallow—the membrane had been forced backwards so as to form a sac, sufficiently large to hold an egg, into which no doubt the tube went in the attempt to pass it.

The party belonging to her did not like—acting upon the old adage, “as long as there is life there is hope”—to throw a chance away by destroying her; however, there is no doubt that she died from regular exhaustion.

The mucous and salivary fluids being streaked with blood, I conceive to have been caused by the rupture of some superficial vessel in the air-passages, brought on by the suffocating distress that took place on the onset. Absorption of the clot likewise, I think, accounts for the disappearance of some of the external swelling, and thereby partially admitting of deglutition. The real cause of the mischief will probably never be ascertained, but I have very little doubt that it was the result of some external injury.

CASE II.—This is one which I have never before met with, and which, perhaps, I never may meet with again.

On the 22d of November, I was sent for to see a bay horse belonging to a gentleman in this neighbourhood. He had been down in the country hunting, and only one or two days previously had travelled home nearly sixty miles, having hunted the day before that. I found him, to all appearance, labouring under catarrhal fever—his respiration rather hurried—extremities cold—a discharge from both nostrils—and very languid. I inserted a rowel in the breast, gave some fever medicine, and left some more for him, with directions as to treatment, promising to see him on the next morning.

23d.—When I went, he appeared much the same in some respects, but the real character of the attack seemed altered, for it evidently seemed more like a head affection. He carried it rather on one side, and, when he attempted to feed, his head was moving constantly up and down in the manger. I then bled him—applied a blister to each side of the head—gave him an aperient ball, and left one to be taken in the afternoon.

24th.—The character of the attack was still more altered, he having lost in a great measure the controul over all his limbs; for when he moved he lifted his knees (straddling) almost as high as the shoulder, and could scarcely turn without the risk of falling: in fact, he did fall once in the course of the day, but got up again directly. I then felt satisfied (the horse still appearing conscious) that it was something connected with the spinal cord within the cervical vertebra. I extended the blister the whole of the way down each side of the vertebra, and, as a great degree of pain was evinced on turning, I bled him again, and gave another laxative ball.

25th.—He was much in the same state. The blister was acting well—the bowels gently relaxed, and the appetite tolerable. He had been down once or twice, but rose with a little assistance.

26th.—I found him down, and he could not rise even with assistance. He was still conscious, and neighing when any one went to him, but his appetite failing. I wished to have him destroyed, but, the owner being from home, I could not do that. He continued in this state for two or three days, when his master, returning, had him destroyed.

On a post-mortem examination the brain appeared quite healthy in every respect; but about three inches from the commencement of the medulla oblongata, attached to the inner surface of its investing membrane (inferiorly), was a tumour about the size of a nut, highly injected, and at its base appearing as if a ligature had been applied round it, there being a dark line all round, and rather indented. There was also a considerable quantum of fluid within the canal. The spinal cord itself appeared healthy, with

the exception of being, as I thought, rather softer than usual. When down, on holding my hand towards his head, if he moved it I observed some peculiar twitchings of the muscles of the neck and extremities, caused, no doubt, by the sudden pressure of the tumour upon the spinal cord.

What could have been the origin of this I cannot say, but most probably it arose from some accidental cause; and I have no doubt that it had been coming on for some time, as I have since heard that, before he went into the country, while a young lady was riding him, she observed that he went rather oddly. That, however, must I suppose have disappeared, or they would not have sent him away.

These are two curious cases, and to me novel ones. If you or your readers have met with any thing of the kind, and will throw any additional light on the subject, I shall feel obliged.

ON HEMORRHAGE FROM THE UMBILICAL CORD.

By Mr. MAYER, Sen., Newcastle-under-Line, Staffordshire.

NOT knowing that any author has as yet noticed the possibility of fatal hemorrhage occurring from the funis umbilicalis after calving, I have considered it my duty to bring the attention of the profession to bear upon it, that they also may be induced to forward their experience to your valuable Journal.

The case in point was that of a valuable young cow, of full plethoric habit, that put herself much out of the way in calving. The consequence was, that after the fœtus was expelled there were two or three quarts of blood poured out from the cord; but as this sometimes occurs, the parties did not take the proper alarm, until the blood kept issuing from time to time in such quantities as to endanger the animal's life: they then sought for assistance, but, before it could be rendered, the animal was dead.

Although, when vessels are ruptured or lacerated, their terminations often coil up in such a way as to stop all hemorrhage, yet the remote possibility of such an event as this shews how prudent it is to pass a ligature around the cord. Had this been done instantly in the present case, the cow would have been saved.

It is equally necessary to tie the portion of the funis hanging from the navel of the fœtus after birth, as I have known hemorrhage occur from the umbilical arteries not having properly closed. At other times the urachus remains pervious, and open; the urine

dribbling continually from the navel, excoriating the surrounding parts; and if this is not stopped the colt dying. When the cord becomes detached close up to the body, the arteries or the urachus can only be sealed up by the actual cautery; but where the cautery has been repeatedly applied until there is much risk in its farther application, then a crooked needle must be passed from one side of the orifice to the other, and whipped well round with tow, as we do in securing a bleeding orifice, thereby bringing on adhesive inflammation. These measures will generally prove successful, and I prefer the latter plan to the cautery.

A SINGULAR CASE OF FOUNDER.

By Mr. JOHN M'LEAN, Barkham, Jedburgh.

To the Editor of "The Veterinarian."

Dec. 10, 1842.

Dear Sir,—I send you the history of a couple of cases; not for any interest they possess, but from the contributions from this side of the Tweed appearing so few and far between in your excellent Periodical.

I am, dear Sir,

Your's truly,

JOHN M'LEAN.

IT is now some months since I was called on to attend a powerful draught horse, the property of a farmer in this neighbourhood, and the interesting appearance he then presented is quite fresh in my recollection. He was a large black horse, standing seventeen hands high, with shoulders and withers as fine and high as any hunter. He was devoid of fat, but possessed of great substance, both in bone and muscle: his shape, in general, was of the first rate; in short, had there been a Goliath of modern days, here was just the horse to carry him. He was standing in an airy loose box, breathing most laboriously, with nose extended and tail erect, and quivering as sometimes seen in lock-jaw; but there was no lock-jaw here. The pulse was 65. On inquiring into his history, I learned that he had been coughing for a week back, and had been a distance of forty-five miles three days previous; that he would not feed on the road, nor after he came home; and being dull, and not feeding on the next day, he was, therefore, kept in from work. On the second morning he was found in the state

described, when the owner bled him, by which he was relieved, and got quieter. In the afternoon he became worse, and was again bled. On the third morning he was as bad as ever, for which he was once more bled and had some oil given; but his owner, a man of experience among horses, became alarmed, and sent for me. I got there in the afternoon—bled him for the fourth time, until he inclined to lie down—and gave him a laxative ball composed of aloes ʒiv et tart. antim. ʒij —had his throat rubbed with liniment, and well clothed and bandaged. He appeared considerably relieved until night, when reaction took place, and he was as bad as before. I bled him for the fifth time, but more sparingly; had the sheets and bandages taken off, and cold water thrown over him, which I managed by having several men to carry buckets-full of water from the well, and pouring it over his back. This was continued for an hour, when the symptoms were greatly mitigated; and, on persevering for half an hour longer, they were entirely relieved. An injection was given, and a ball containing tart. antim. ʒij . I left him, and the owner was to let me know how he was in the morning. No word came; and the next time I met him he told me the horse never had another “ducking,” but got on to feed, although coughing, and was at work a few days after.

I had another case somewhat similar a few days ago, but connected with founder. I relieved the active symptoms by copious and repeated bleedings, laxatives, and antimony, which I pushed to the fullest extent, as I was averse to the application of cold water in this case, from the acute founder that was existing. I have seldom seen the same train of symptoms, except in hot or nervous horses, where there was an inclination to take on flesh, or, as it may be termed, of a nervo-sanguineous habit. The disease, no doubt, was symptomatic fever, arising from the over-exertion the animal had undergone, and there being a cold existing at the time, the hot and cold stage not generally being so well marked.

A SINGULAR OPERATION ON A PIG.

*By Dr. MERCER, F.R.C.S., and Lecturer on Anatomy,
Edinburgh.*

Castle Hill, Edinburgh,
Dec. 10, 1842.

Sir,—As cases of absence of the greater portion of the rectum, by congenital obliteration, are by no means common among domestic animals, the following account of such a malformation,

with the operation performed for the renewal of the passage, may prove acceptable to the readers of *THE VETERINARIAN*.

A boar pig, aged exactly three weeks, was brought to the dispensary of the Edinburgh Veterinary College on the 23d of June last, and submitted to the examination of Professor Dick, who kindly requested my attendance, and to perform the operation. It was stated by the owner that, a few days before, in consequence of the enormous distention which the belly of the animal had assumed, and the symptoms of extreme pain and distress that it shewed, and that had been from that time hourly increasing in severity, he was induced to examine it carefully, and found that it was perfectly "smooth and plain behind," and with none of the natural appearances of an anus. Hitherto it had fed well, and was in as thriving a condition as the others of the same litter; but for two or three days it had been continually crying, rolling about from side to side, as if desirous to relieve itself of the contents of the belly; and what little food it had taken during this period it invariably vomited again in a very short time. So far as he had observed, however, none of the contents of the bowels had ever been brought up with it.

Supposing that all was not right, and that the symptoms depended on the fundament having been grown up, he had himself attempted to renew the passage, by making an incision completely through the integuments from the root of the tail to the base of the scrotum; but, not finding the discharge of matter which he had anticipated, he desisted from further cutting.

On examination we found the animal in excellent condition, firm in flesh and very plump in substance. The belly was extremely swollen, tense, and firm; so that progression was entirely prevented, and the slightest degree of pressure was indicated by symptoms of great pain.

On passing the point of the finger into the wound that had been made, I found that the whole thickness of the integuments had been divided in the proper place, but no sense of fluctuation was conveyed to the point of my finger, so as to indicate whether or not the blind extremity of the gut had stopped short at the surface, was more deeply seated, or was in communication with any other of the pelvic viscera. By a slight degree of pressure in the perinæum and over the pubes, we were enabled to obtain the contents of the urinary bladder; and as this discharge was perfectly transparent and natural in appearance, we were convinced that the bowel was not in connexion with it, and that in all likelihood it had ended in a *cul de sac*, farther forwards in the pelvis.

The animal being suspended by the hocks, a small sharp-

pointed bistoury was taken, and a careful dissection made downwards, exactly in the mesial line, cutting through the fibres of the sphincter and retractor ani muscles on either side. The retractor ani muscles were found perfectly united along their pelvic surfaces for about one inch and a half; and, after they had been carefully separated from each other, in order to form the walls of the new canal, the point of the finger came upon some loose cellular tissue. On the animal being placed in the perpendicular position and caused to cry and strain, a fluctuating swelling was pressed against its point at each expiration. The knife, with its cutting edge sheathed nearly to its point, was then pushed through the apex of the tumour, when a gush of fluid fæces took place, with the effect of diminishing the tension and swelling of the abdomen, and affording immediate relief to all the urgent symptoms. A flexible gum bougie was then introduced into the bowels to the extent of six inches, and as its point was felt to pass on and move freely in it, I concluded that the end of the bowel had been opened, and that no farther obstruction existed in it, in the form of complete partitions, which have several times been found in similar cases in the human individual.

To induce the peristaltic movements of the bowels to carry off the remaining feculent matter a dose of saline laxative medicine was given, and, for a few days, the animal was ordered to be fed on soft mashed meat. A tent of lint, smeared over with lard, was introduced by means of a bougie along the whole of the wound, and the owner was instructed to withdraw it occasionally, and to introduce a small wax bougie several times a-day.

From this time the case went onwards to a successful termination. The bowels became regularly evacuated; the tension of the belly receded, and the animal got on in its feeding, and thrived extremely well. The surface of the wound healed kindly over, leaving a good-sized canal for the passage of the fæces, and the animal seemed to have very considerable power over the anal muscles in retaining or expelling voluntarily the contents of the newly-made passage.

Pathologically considered, the above case cannot be viewed as a simple one of imperforate anus, but rather as one of absence of the greater portion, if not of the entire length, of the rectum. This statement will be more evident when the depth to which the dissection had to be carried—an inch and a half from the skin—before the bowel was reached, and, connected with the age of the animal, the comparative shallowness of the pelvis, and the shortness in the length of this portion of the intestine at this period. When all these things are considered, it would appear

more probable that the entire rectum was wanting, and the extremity of the colon terminated at the promontory of the sacrum, to which it was bound, and the rudimentary rectum consisted of a fibro-ligamentous cord passing backwards to become blended with the pelvic fascia that forms the lateral ligaments of the bladder, and with the muscular tissue of the retractores ani muscles.

In the majority of such malformations in the human individual, the termination is fatal very shortly after birth, unless relieved either by an operation or by an outlet existing or taking place into a neighbouring cavity, having a communication with the surface of the body. In the male, such a connexion takes place with the urinary bladder; in the female, with the vagina; and thus, for a time, the fatal event is prevented by a partial draining away of the contents of the bowels. When none of these outlets, however, are effected, the colon bursts, and its contents being effused into the peritoneal cavity, the severest form of peritonitis is induced, which rapidly ends in death.

To the human pathologist, therefore, the case which we have related is one of very considerable interest, in reference to the great length of time (twenty-one days) that supervened between the period of birth and that when the relief was given; and that, too, without any of the abovementioned circumstances having taken place: and still more that, during all this time the animal had fed well, and even thriven under such circumstances.

Had not, however, speedy relief been given, it was impossible, from the distended state of the colon, that its coats could have withstood the accumulation much farther, and in a short time rupture would have taken place, and a fatal result would have ensued.

I am, Sir, truly your's,

JAMES MERCER, M.D.

Fellow of the Royal College of Surgeons, and Lecturer on Anatomy, &c. Edinburgh.

In the names of all our readers, we offer our cordial thanks to the author for the interesting account of the manner in which Dr. Mercer has mixed himself up with such a subject. But every being, according to him, claims at our hands the offices of mercy. Our pride is, that such an one will meddle with our comparatively inferior concerns. He shall find his reward in our greater respect for his profession—our determination to support the honour of our own, and our greater disposition to

“Cast round the world an equal eye,
And feel for all that live.”

A SINGULAR CASE OF RUPTURE OF THE STOMACH IN A HORSE.

By Mr. R. B. PATERSON, V.S., Dumfries.

THE case sent by me for insertion in your valuable journal for May 1841, was not one of that kind which essentially differed from any that had preceded it. The only object I had in writing to you at the time, as I before stated, was in order that an accumulation of unvarnished facts might be given to the world, for the purpose, if possible, of forming a correct pathology of the disease—puerperal fever. The subjoined case of rupture of the peritoneal and muscular coats of the stomach, and leaving almost entire the mucous coat, is one which I think will be read, by the members of the profession at least, with considerable interest.

The subject of the present history was a bay colt, three years old, the property of James Wilken, Esq. Zinwald Downs. He was at a horsebreaker's establishment in town, for the purpose of being broken into harness.

I was called at nine o'clock in the evening of the 20th of October 1842, and was told he had been trembling severely, and had had administered to him ℥iij spts. æther. nitrici, and was bled. His pulse was at that time 80; he was continually shifting from one leg to the other, but feeding occasionally.

I then gave him pulv. digital. ʒj, nit. potass. ℥iij, in gruel. About twelve, his pulse being still on the increase, and the uneasiness likewise, I gave him tinct. opii ℥iiij, spt. æther. nitrici ʒij, ol. ricini ʒxv, and enemata.

About three o'clock on the morning of the 21st he became quieter, and his pulse reduced to 64; we then left him.

I again saw him at half-past nine, A.M., when he was worse, his pulse being 96, and full. He was again bled, and got a ball composed of pulv. digital. ʒj, pulv. antimonialis ʒij, opii ʒss, Barb. aloë ʒiss, and frequent injections.

1 P.M.—The pulse was 102, and breathing much accelerated; but the colicky symptoms disappearing.

3 P.M.—The ball was repeated.

7 P.M.—Pulse 97. A ball was given, composed of pulv. digital. ʒj, pulv. antim. ʒij; hydrarg. subm. et opii, āā ʒj.

11 P.M.—Ball repeated: breath fœtid.

10 o'clock on the morning of the 22d: pulse 90, seemingly easier. He got a ball as the last, with spt. æther. nitrici ʒij.

1 P.M.—Bowels open; pulse 88. Ball and nit. æther. repeated.

4 P.M.—Pulse 85, and intermittent.

6 P.M.—Pulse 82. Nit. æther. was given in gruel. Breath still fœtid.

At half-past ten, P.M., continuing better; pulse 74. Spt. æther. nitrici ʒiss was given, with ball repeated.

Ten o'clock on the morning of the 23d he was much better. He had been down during the night, and in the morning the pulse was 62. Continue the nit. æther. and ball composed of hydrarg. submur. ʒiss, Barb. aloë et digital. āā ʒiiss, opii ʒj.

1 P.M. —Pulse 59. Continue the nit. æther. in gruel, but omit the digitalis, &c.

6 P.M.—Pulse 54—legs and ears warm—dung fœtid: had been lying down—pulse intermittent. Continue the nit. æther. in gruel.

10 P.M.—Pulse intermittent, 48 in number. Give nit. æther. in gruel.

At ten o'clock on the morning of the 24th, the pulse 45, and intermittent. Repeat the æther. in gruel, and allow a small quantity of bran mash.

6 P.M.—Pulse 44, and slightly intermittent.

8 P.M.—An exacerbation—pulse 52: had been allowed some hay; breathing more hurried. Nit. æther. repeated.

At nine o'clock on the morning of the 25th, the pulse was still 52, and feeble, and remained so during the whole of that day.

8 P.M.—Repeat the febrifuge medicine.

October 26th.—Pulse 47—dung laxative.

27th.—Still continuing better. Allowing him still the nit. æther. and gruel.

28th.—Pulse 34: I considered him nearly well: he was eating mash with a small quantity of oats mixed in it.

So far the case did well. He continued feeding with an apparent appetite, and looked quite lively until the 31st of October: I saw him on the morning of that day, when he seemed quite at ease. I was, however, called again to see him at three o'clock, P.M., when I found him lying at full length in the box, with his head and extremities stretched out to the utmost, his pulse 79, and wiry. He did not continue down any length of time, for he immediately rose, and remained standing for about two minutes, when he again laid himself cautiously down, and for the first time kicked out as if griped. I thought it was a renewal of his old complaint (gastro-enteritis), and gave him a ball composed of Barb. aloë ʒiss, opii ʒj, hydrarg. subm. ʒij, digital. ʒj, ext. hyosciami ʒss. Being trembling, he was bled to the amount of three quarts (it was impossible to get more), and spt. æther. nitrici, ʒiij was administered.

5 P.M.—Pulse 90, but getting weaker: still trembling, mostly

in the anterior parts of the body, and only when standing. More of the æther was administered, in order to produce reaction. I should here mention, although in the course of sixteen hours he got ℥xiii spirit. æther. nitrici, yet the tremor never left him.

7 P.M.—Still worse. I had his abdomen fomented with a carpet wrung out of hot water, and got Barb. aloë ʒi , opii et. hydrarg. subm. āā . ℥ij , ext. hyosciam. ʒss , pulv. digital. ʒj , in the form of a ball.

11 P.M.—Ball to be repeated at that hour, if no better. Still trembling. Repeat the æther in gruel, and give injections every hour. Getting worse.

Between twelve and one o'clock, I had rubbed on the belly sinipas. ℥ij , ol. terebinth. ℥viii , aqua bullien. q. s. ; but it seemed to make no impression on him, although it was so powerful that the attendants could with difficulty stand it.

At one o'clock on the morning of the 1st of November he vomited four times.

At two A.M. pulse 110, and scarcely perceptible—great prostration of strength. The ball and nitrous æther were continued. He now fell repeatedly, and lay for a little while as if he was quite inanimate.

4 A.M.—Standing more, but sadly weak—the legs and ears alternately hot and cold—mouth cold and clammy—pulse scarcely to be felt either at the submaxillary or radial artery—breathing very quick, so much so, that the heaving of the flanks was almost synchronous with the pulse, and it could scarcely be numbered. From this hour until seven o'clock he became more and more exhausted, and his sufferings more and more intense, until he died.

Such is a hasty description of a case, possessing more than a common degree of interest, from the striking peculiarities presented in the post-mortem appearances, which I will now endeavour to describe.

The examination took place twelve hours after death. On laying open the abdomen, a quantity of gas made its escape, which induced me to think the cæcum was punctured ; but, on that portion of the intestinal tube making its appearance, as it is usually the first to do, it was seen to be entire.

On proceeding to cut away the abdominal muscles, from the linea alba towards the spine, the scalpel following the natural course of the ribs, a considerable quantity of liquid feculent matter was observed to escape. The intestines were then carefully drawn back, and held to one side, in order to expose the stomach, on the surface of which was a considerable quantity of solid ingesta, which had lately been contained in the interior of that

organ, but which had ultimately escaped through an irregularly shaped opening in the mucous coat. The peritoneal and muscular coats having become ruptured in some way or other, the edges had receded from each other to the distance of five inches and a half at one part, and tapering gradually on each side for seven inches, making (in these two coats) an elliptical rent eighteen inches in length, with serrated edges, resembling very much the sagittal suture, and leaving entire the mucous coat, beforementioned, with the exception of the opening, which would have admitted a man's thumb.

It is worthy of remark, that this perforation or hole does not appear (for I have still the preparation) to have been formed at the same time that the rupture had taken place in the other two coats. The form of the opening forbids any such conclusion: it appears to me to have been caused by the attrition of the food against it.

The peritoneum covering the parietes of the abdomen, and reflected on the intestines, were both inflamed, no doubt from the irritation produced by the contents of the stomach in the abdominal cavity.

The thoracic and other viscera seemed perfectly healthy.

On a careful perusal of this case, several important questions naturally suggest themselves. Reasoning on mechanical principles, is it possible that such a degree of force could be so nicely adapted as to produce rupture in the peritoneal and muscular coats, and leave entire one, which has become so attenuated as to resemble the finest paper? Would the folds, apparent on its inner surface, assist in preserving that membrane?—or may it not be ascribed to that vital principle exhibited in the ulcerative process, which, while it involves and destroys the surrounding textures, leaves entire, and in some instances completely isolates, the vascular and nervous systems? Is it likely that his first illness (lasting from the 20th October until the 28th) was in consequence of the rupture of the two outer coats; and that his second and fatal attack on the 31st October, when the symptoms were so alarming from the first moment he was observed, might have been in consequence of the inner membrane becoming perforated?

If such a view of the case is taken, it will probably assist in enabling us to arrive at the conclusion, whether or not a horse can vomit with his stomach ruptured.

ON THE PATHOLOGY AND GENERAL TREATMENT OF CATTLE.

By Mr. ROBERT READ, Creditor.

THE anatomy and pathology of cattle and other domestic animals will not in itself form the completion of the study.

The tyro who steers from the College with a full share of the knowledge of the diseases of cattle, and launches forth into country practice, will have to surmount many obstacles; more especially if he has not, in his younger days, been accustomed either to agriculture or to the habits of every kind of stock. To the young beginner or aspirant for country practice, who has scarcely, if ever, wandered from the busy city or fashionable town, a few hints may not, I hope, prove unwholesome. Opinions will be formed among farmers or their hinds as to your merit or demerit in your profession—your being or not being apt in all the mechanical operations belonging to cattle; therefore it behoves every young man, under such circumstances, to learn the way to hold a bullock by the nose and horns; to be able to cast him; how to take up his feet; how to head-rope him; and, likewise, how to milk. This latter circumstance will be required in every case of udder-ill or mammitis, in order to ascertain the state of the secretion; for should you attempt to handle the teat and not draw any milk, or go to the wrong side of the cow, the milk-maid standing by, the laugh would be against you; and the words to the mistress would be, “A pretty sort of a cow-doctor: he didn’t know the milking side of the cow.”

Farmers imagine you ought to know the quality of stock and likewise be a judge of it, if you profess the healing art with regard to those animals. It will, therefore, be necessary for you to learn how to handle, as well as be able to judge the weight—how many score lbs. per quarter this or that bullock may be now, or will be at such a time; whether he is good in this point or bad in another; whether his horns or his tail are set on right or not; and many other little but essentially important particulars of this kind. If you excel in these points, farmers will anxiously seek after you for your opinion.

You should also learn the common rudiments of agriculture, so that when you walk over his farm you may be able to give your opinion on the soil, the average of his yearly crops, the uses of manure, the nature of the diseases of corn, the manner in which chemical manures act, such as ammonia and potash: by such steps you will endear yourself to your employer, and become a useful member of society. Make yourselves, also, ac-

quainted with good and well-made provender, that you may be enabled to say such corn or hay will not do for this or that animal.

I do not mean to say that you must be able to reap and mow, plough and sow, in order to be a country veterinary surgeon, but it is absolutely necessary that you should be acquainted with the *methodus operandi* in nearly all its branches.

Learn, also, what kind of stock is best suited to the soil. If you do not pay attention to this grand principle, you, in the treatment of numerous diseases, will fail to eradicate those which so often appear at some season to such animals as have not been habituated to the soil primogenitively; for it should be borne in mind, that those farmers have the best luck, as it is termed, with their stock that rear and breed in conformity with locality, climate, and soil. In those three words are comprised the form, condition, and quality of every animal. If I am apparently digressing, it is for the purpose of elucidating to the young man, about to begin life, the nature and character of the principles he must adopt, and the course he must pursue. A farmer, for example, year after year, loses two or three valuable cows from diarrhœa. There must be a cause for this. You would probably ask him, "Have you been crossing?" If he is honest, he will immediately acknowledge that he has. You will ask him a little farther,—“Did you lose stock before in such a manner?” “No,” he will reply, “but I have been trying a finer sort.” The mystery is at once explained; he has had either a bull or a cow not adapted to the climate and produce of the estate. It may be either too rich in the production of food, or it may be deficient in quality. It will, therefore, be impossible to exterminate disease on some farms if attention is not paid to this principle. Questioning as to any hereditary taint, or to any probable crossing, should always be remembered by the veterinary surgeon when diseases occur on farms at or about the same time, year after year. As oxen are used in most counties for the purpose of ploughing, attend frequently to witness the operation of cueing or plating those animals, as they are liable to be occasionally pricked in nailing, as well as rendered lame from its being imperfectly done.

Learn the way to pare out the sole, as matter is frequently imprisoned beneath it, the same as in the horse.

Render yourself useful by assisting the hobbling and casting; the dexterity with which this is done by some country vulcans is almost incredible. You may probably, when in attendance at farms, have to perform these operations yourself, or give the proper instructions for doing so, when about to perform any operation connected with the feet.

You will be called on to perform other important operations.

Your assistance will be required in relieving the parturient cow. Make yourselves familiar with all the varied forms of unnatural presentation, for it is only in very difficult cases that your aid will be required. The farmer or his hind most times officiate when no very great obstacle exists. Nothing will add more to your fame than the having performed with success what they could not accomplish. You will frequently, also, be required to extract, by manuduction, the placenta, and, to very delicate stomachs, it will be a nauseous affair, particularly after decomposition has commenced; but the old adage is trite, "dirty hands get clean money;" therefore the ringed finger and delicate hand must, generally speaking, be laid aside in the labours of country practice.

One thing more I would add, and that is, make every endeavour to learn the true nature and character of disease, and the value or worthlessness of the animal from external conformity. In severe or acute diarrhœa particularly, you will often be called on to give your opinion, both by dealers and farmers, when dispute arises. The external appearance of the animal will, in most cases, tell you its real worth, and the length of its existence. I shall not enter into a minute detail of these things, but leave them to your able Professor.

Make yourself acquainted with the colour and consistence of the fæcal discharges, as they are influenced by or produced from the different sorts of food. If you do not attend to this, you may err in your prognosis, and that much to your discredit.

There are many mechanical disorders that you will be called on to treat; such as choking from various causes, &c., which I am fearful you can never fully attain a thorough knowledge of at our institution, although, as I have before stated, you may have a full and instructive acquaintance with anatomy and pathology. Neither do I see how it can be fully carried out, except there is attached to our College a farm for the admission of every kind of stock. This is, in my opinion, an indispensable requisite; the farming, the manuring, the buying, and selling, to be left, occasionally at least, to the judgment of the senior pupils. Such a plan, systematically and honestly carried out, would form an ample and a valuable field for the acquirement of that knowledge which the veterinary surgeon ought to possess. In conjunction with these all-important circumstances, we peculiarly possess—and it is a mine of wealth—the talent and the industry of Professors Simonds and Morton; the latter of whom, in addition to his other duties, could, with credit to himself, teach the rudiments of agricultural chemistry.

[To be continued.]

TWO CASES OF RHEUMATISM.

By J. TOMBS, Esq., of the Hon. East India Company's Service.

CASE I. *May 13, 1842.*—A yearling colt was taken suddenly lame in a meadow adjoining the river Avon, and was led immediately to the stable. I found him halting in the off hind leg, which was very much swollen. A repellent lotion was applied.

15th.—Lame in the near hind leg—in great pain—continually shifting his extremities, and very feverish. I administered laxatives, and opened the femoral veins.

17th.—He was very stiff across the loins, and lame in both hind legs. I gave febrifuge medicine, fomented the extremities, and re-opened the femoral veins.

19th.—Alternately lame in both hind legs, and the muscles of the loins and rump affected. The pulse is quick, and the tongue furred. We appear to have a decided case of rheumatism, as the fetlock joints are sometimes swollen, and then the hocks and stifle joints. Give febrifuges, and embrocate the affected parts.

22d.—Much improved. He feeds, and voids his urine with greater facility, for hitherto it has been discharged with extreme difficulty. When he is down, he can now get up without assistance: he is not so much tucked up at the flanks. Give tonics, and continue the embrocations to the affected parts.

28th.—He is getting well rapidly, and is turned out in the daytime.

June 6th.—He is quite well: turned out for good.

CASE II. *July 20th.*—A two-year-old cart filly had been ill a fortnight before I saw her. This was caused by over-exertion at plough. She perspired profusely, and was suffered to cool in a current of air. When I visited her she could scarcely drag her hind legs after her, and was dreadfully tucked up in the flanks: the acetabulum and muscles of the loins and haunches were all involved in the lameness. Her pulse and breathing indicated fever. The appetite was impaired—she would not lie down. She is enduring great pain—lifting her hind legs up alternately for a minute together close to her abdomen.

As in the preceding case, I bled copiously from the femoral veins, gave laxatives and fever medicines, and fomented the loins and haunches repeatedly.

July 25th.—*In statu quo.* Blood-letting again was had recourse to. Sedatives given, and the posterior part of the body was kept wet with a blanket frequently dipped in hot water.

August 1st.—Slight improvement—still very stiff and lame and feverish. Continue the medicines and fomentations.

9th.—Much the same as when I last saw her. Stimulate the loins, hips, and haunches.

15th.—No progress in regard to lameness, although the feverish symptoms are abated, and the appetite better. I inserted several setons over the gluteal muscles and thighs.

27th.—Slight improvement, so far as the fever and lameness is concerned, but she cannot get up without being assisted. I blistered the parts that were previously stimulated.

Sept. 7th.—She walks and feeds better—can get up without assistance, and lifts her hind legs up occasionally.

27th.—Great improvement. Blister repeated. From this time she gradually improved, and, at the latter end of October, was fully restored to health.

THE VETERINARIAN, JANUARY 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE Secretary of the Charter Committee entreats that every graduated veterinary surgeon who has not hitherto communicated with him will kindly favour him with his name and address. Although there are, probably, but few of whose abode he is ignorant, circumstances may occur that may render it desirable, with the least possible delay, to consult the whole body of the profession.

Mr. Youatt is happy to be permitted to announce, that the Journal Committee of the Agricultural Society of England has permitted him to have access to the numerous communications from every part of the kingdom respecting the epidemic of 1841. It will be his duty and his pride to render the history of this period as full and as correct as possible. He will be thankful for any assistance that may be rendered to him. It shall be

fairly acknowledged, and no party politics shall for one moment be found to intrude.

The history of the epidemic of 1841 will prepare for that of 1842-3. Here he solicits information from every quarter, and he will never abuse the confidence that may be reposed in him.

These narratives will be a continuation of those that were commenced in the last year, and will regularly occupy a certain portion of our periodical.

We have heard from various persons some strange accounts of certain *steeple chases* that have taken place among those who ought to be, and who profess to be, the friends of the horse, and studying how they shall best relieve him from the ailments to which he is too often exposed. It has always struck us that there is an inconsistency in this which the advocates of the steeple chase can never get over. It is putting to hazard the enjoyment and the life of an animal that we are bound by every good and honest principle to save from pain and danger. It can have no possible recommendation but a boyish recklessness, which, in after-years, will be recollected to their cost—will lessen the confidence of their employers, and frighten from their establishments those whose good opinion they would court, and on whom they will have to depend for their success in life. It is a folly which they themselves, at some future period, will ultimately be the first to condemn.

“It is,” says Nimrod, “an unreasonable demand on the noble energies of the horse to require him to go, at nearly a racing pace, over rough and smooth, sound and dangerous ground—a country that has been purposely selected for its danger, and on which many a horse has died from the exertion and the accidents of the chase.” Has man any delegated power like this over the inferior creation, and especially the noble horse?—any right thus to speculate on his endurance of suffering or escape from danger? It would be far better to reserve his own prowess and that of his horse for a better and a nobler cause: such an one will occur in the course of a long life, and in which the speed, and courage, and endurance of both the horse and the rider will most satisfactorily be put to the test.

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LECTURES ON HORSES.

By WILLIAM PERCIVALL, M.R.C.S., *Veterinary Surgeon*
First Life Guards.

THE FETLOCK.

FROM the cannon we descend to the pastern, the two parts being connected by the joint known by the name of the *fetlock* or *feetlock*; so called from the lock or tuft of hair which grows from it.

The cannon, pastern, and coffin bones of the solidungulous animal bear evidence, in their formation, of that incorporation or consolidation of parts which we observe to take place in the scale of analogous structures, at the top of which stands the most perfect of digital formations, the human hand, at the bottom, immediately below the cloven foot, the solipede or solid hoof; each losing something which renders it less useful as a hand, but gaining something which better adapts it for a foot, until all regard to the former is lost, and the latter remains paramount and exclusive. The cloven foot of the ruminant still maintains some clutch or hold upon the ground, but the undivided hoof of the horse is deprived of all this: that, *in its shod condition*, cannot be said to take any further hold upon the earth than what is mechanically derived from the pressure caused by the superincumbent force or weight, from the unevenness of the surface of the foot, from impress of it upon yielding ground. In the same manner that the cannon bone of the horse can be demonstrated to consist of an union of two metacarpal bones, so the pastern bones may be said, each of them, to be constituted of two united phalanges, and the coffin of a junction of the two separate or semi-coffin-bones of the cloven foot.

The lower end of the cannon-bone has two roller-like, smooth and polished surfaces, which play within correspondent concavities upon the summit of the pastern bone: the position of the latter, however, being obliquely forward, while the former stands in a perpendicular line, a large vacuity would necessarily be left behind, were not the sesamoid bones placed there for the purpose of completing the joint. These two little supplementary bones are kept in their places by ligaments, two running crosswise, attaching them to the pastern bone; but their mainstay, that which principally upholds them, and admits of the play or motion of them during the action of the fetlock-joint, is the *suspensory ligament*. The sesamoid bones are so bound to the supero-posterior part of the pastern, that the three together form a cylindroid dish-like hollow, into which is received the lower end of the cannon-bone; and the weight from the latter preponderates upon one or other of the former, depending upon the obliquity or line of direction the pastern takes on leaving the cannon in its course to the foot. When the pastern deviates but little from the perpendicular of the limb, it is said to be "straight," and is almost always made "short;" so that short and straight pasterns are consentaneous formations: the reverse, short and slanting pasterns, being incompatibles, or at least such a combination as is rarely seen, and is attended with disadvantages both of strength and action. When, on the other hand, the pastern forms, in leaving the cannon, a considerable angle, it is said to be "oblique," and is almost always extended in length, so as to assume the denomination of "long" or "lengthy:" this is a disposition of parts which also has its peculiar advantages, and one that would have its objects defeated or much abridged by any disproportionate shortening with the obliquity.

In proportion as the pastern is upright in position, less weight is imposed upon the sesamoid bones, more upon the pastern bone, and *vice versâ*. What pressure or weight the pastern-bone receives descends to the coronet, and thence to the coffin-bone. But what becomes of the weight imposed upon the sesamoids, they having no bones below to transmit it to? They are in a somewhat similar situation to the splint-bones; they call upon their attaching bands—their *ligaments*—to support them under the load; and their ligaments do so by yielding—they being elastic—so long as force is operating; and the instant it is not, they, through elasticity, again recover their short lengths, and so raise the sesamoid bones into their places. This descent and ascent of the sesamoids is not to be compared with that imperceptible and disputed motion of the splint-bones; on the contrary, it is a demonstrable and beautiful descending and ascending operation—a playing down and up, after the manner of a spring of most elastic and exquisite workmanship;

imparting, at every step the horse takes, its anti-concussion influence to every part of his frame. Watch the long and elastic fetlocks of the Arabian or race-horse, as he is cantering upon turf, and at every bound he makes will the tufts of hair from those joints be seen dipping upon the ground; though, while the animal is standing still, they may be some inches even removed from the surface. Nothing can evince more beautifully and plainly than this the movements of the fetlock-joints.

The attaching band or ligament upon which the sesamoids repose in their descent, and depend for their re-ascent, is the *suspensory*. And, in order to shew what proportion of the superincumbent weight these bones sustain, or, rather, how insufficient the pastern is without their aid to support the burthen, we have only to cut the suspensory ligament through: that done, the horse is, in real truth, "broke down;" the feet slip forward, and the toes turn up, while the fetlocks bend down upon the ground. Not so after division of the flexor tendons: we occasionally sever them by way of remedy for "knuckling over," and all that results is, the enabling or forcing the animal to set his heel upon the ground: once divide the suspensory ligament, however, and no power left is able to maintain the pasterns erect. The suspensory ligament is, therefore, one of the mainsprings of the machine in action—one of the chief of those beautiful contrivances, which, while they save the leg-bones from being smashed to pieces under the weight and shocks they have to sustain at every bound and leap the animal makes, insures his rider ease and safety to his journey's end.

I have instanced the Arabian and the racer as most strikingly shewing the operation of the spring of the fetlock-joint, the limbs of horses of high breeding being characteristically remarkable both for the length and for the obliquity of their pasterns: other horses will evince this springiness in proportion as their pasterns possess the necessary length and obliquity, and such as have short and upright pasterns—cart and dray-horses—will possess it in the least degree. Why should this be? Was not elasticity and defence against concussion required in the cart-horse? Yes! to a certain degree; but not in like degree with the property of strength: he is an animal designed for feats of strength, his movements under such performances being tardy and measured; altogether unlike the race-horse, whose movements are required to be airy, and fleet, and bounding, with loads of the lightest description upon his back.

The late Professor Coleman—in his work on "The Foot of the Horse"—has thrown excellent light upon this part of our subject: "While the animal is at rest," says he, "and also during motion, these (sesamoid) bones sustain part of the weight; and where the pastern-joints are long and oblique, the sesamoid bones often

receive so much of the weight as to put the ligaments violently on the stretch, and occasion lameness. This effect also may ensue in consequence of the heels of the hoof being improperly cut down, or the toe allowed to grow too long, or the heels being first raised by a high-heeled shoe, and that suddenly changed for a shoe with thin heels. All these causes, however, whether separate or combined, do not operate with so much violence in the hind as in the fore legs. The additional weight of the head and neck to be sustained by the fore legs, renders all their springs more liable to injury and decay than the corresponding parts behind."

Although the fore limbs actually support more weight than the hind, and receive shocks of concussion unknown to the latter, and on these accounts become the ordinary seats of lameness, and are often seen worn out while the hind legs continue serviceable, yet, we must not pass by unnoticed that which, in this instance, would seem to have escaped the observation of the Professor, viz. the great deal the hind legs have to do as the agents of progression, and the consequent frequency of failure in the hind fetlock-joints. We know that many of our first hunters and racers become incapacitated from what is called "breaking down behind;" and we have no reason to feel surprise at this, when we consider the work these joints have to perform in progression: next to the hock, indeed, there is no part of the hind limb so forced and strained as the fetlock. One of the best race-horses this country ever produced—the Colonel—failed from this cause; and no effort on the part of Mr. Goodwin could set him up again upon the turf. Harness horses, employed in laborious draught, are very apt to fail in their hind fetlocks, these being the joints upon which so much stress is made in strenuous efforts in drawing up hill or along heavy roads. The greater the exertion the fetlock-joint is put to, the greater the flexion of it, and consequent stress or strain upon the sesamoids and their tendinous and ligamentary supports, producing either overstretch of them, or laceration of some of their component fibres at the moment, and thus occasioning immediate lameness; or else, by a repetition of effort, in time impairing or destroying their elastic properties, and thus inducing that relaxation and puffiness of the joint which we constantly observe in horses who have been, in the manner described, for years subjected to hard work.

Two circumstances, then, influence the quantum of stress or weight imposed upon the sesamoids,—the degree of flexion of the fetlock-joint, and the position, straight or oblique, of the pastern; and both these circumstances are, in a measure, under our control. We cannot, it is true, lengthen or shorten the pastern; but it is in our power, by means of shoeing, to alter the position of it: "The heels of the hoof being improperly cut down, or the toe allowed to

grow too long, or the heels being first raised by a high-heeled shoe, and that suddenly changed for a shoe with thin heels," are all causes which, says Professor Coleman, put the sesamoids on the stretch, and, on occasions, do so, no doubt, to the injury of their ligamentary connexions. There is not, however, so much harm done in this way as people in general imagine. Certainly, art cannot more insult nature than by suddenly and unpreparedly altering the habitual condition of any part of the body; and were a person to set about to produce lameness, perhaps he could hardly resort to a more effectual expedient than that of momentarily changing the relative position of the parts composing the fetlock and pastern joints, either from an upright to an oblique, or from an oblique to a straight position; indeed, were the surface upon which the horse treads like that of the table upon which we are writing, level and unyielding, injury might be certain to result. But, as matters stand, in the first place, there is almost always more or less yielding of the ground under the horse's feet to counteract the effects of this unnatural bearing of parts, and, in the second, there is inherent in the parts themselves a power of adjustment, sufficient, we believe, on all ordinary occasions, to ward off injury to them, until such time as they shall be able to accommodate themselves to their new situations, or even, for a time, while the horse is going upon what may be compared to the table, viz. wood-pavement. We do not deny the mischief that may accrue from injudicious heightening or lowering of the heels of the foot by shoeing; we only have less apprehension of the consequences, on account of the yielding nature of the ground and the adjusting power of the parts themselves, than appear to be entertained by horse people in general.

ON THE PATHOLOGY AND GENERAL TREATMENT OF CATTLE.

By Mr. ROBERT READ, Creditor.

[Continued from p. 57.]

THE acquirement of a little knowledge of chemistry by the country veterinarian, as relates to farming, will be the means of making him the pleasant associate of the agriculturist; for the cloud of ignorance that, only a few years since, overshadowed the cultivators of the land, is now fast dissolving away, and the generality of our yeomanry are become scientific men and thirst after that knowledge which tends to the improvement of their

minds, and to those scientific inquiries which will be the means of increasing the value of their land and its produce. The works of Professors Daubeny and Liebig now form a part of the library of the farmer, as they ought of the veterinarian. Natural history will form also a pleasing study; "the investigation of the different tribes of insects," the habits of the numerous aphides, so multifariously distributed, and none more successful in blighting the prospects of the crops of the farmer—these will add also a pleasing and profitable link to our profession; for, be it remembered, we should stand as high in the estimation of the agriculturist, by finding a remedy for the destruction or prevention of this insectile tribe, as we should for the discovery or the cure of disease affecting his stock. It will be occupying too much space to enter into a thorough detail of the genera aphidæ here, but sufficient history can be gathered from the authors on entomology, and in the quarterly volumes of the Royal Agricultural Society. Next comes geology in connexion with agriculture, which initiates us into the different surfaces and subsoils, while chemistry gives us the component parts, some of which may be rich in the production of nitrogen, and possess high powers of fertilizing, causing, under certain atmospherical circumstances, a rapid development of growth; and the different kinds of grasses, or staminiferous herbage, then become charged with azote or ammonia, known by its deep green hue or tinge. Cattle and sheep, when depasturing on these, will begin to have their secretions increased, and assimilate the nitrogeneous principle, and convert it into fat: but such soils, as is too often the case, particularly meadows near towns, are surcharged with the products for the formation of ammonia; and cattle and sheep, when turned into them, are frequently found dead from apoplexy, paralysis, or congestion. On the other hand, the absence of the alkaligeneous principle, as an active agent in some soils, is a cause of disease, from not furnishing material enough for the constituents of the animal frame.

This is a beautiful range for philosophical inquiry, and will ultimately prove that the most part of our diseases in cattle are caused by a limited range in depasturation, and that scarcely any disease would arise, if uncontrolled by the boundary of man. Domestication and art doom them to unnatural disease, which remains for us to combat. Excess and want of the vital principle of vegetation are both causes of disease in animals. This leads me to the aptitude that several soils have in the production of disorder in our stock. I am well acquainted with several farms in which red-water is prevalent at certain months in the year; and, from remarks which I have made on this complaint, con-

sider it is produced from the want of azote, or the alkalescent principle in the produce of some soils, and an excess of acidity in the digestive viscera of the animal. The blood, from its absorption, becomes highly seriferous. It is carried off by the kidneys holding some of the colouring matter of the crassamentum in solution, which colour is modified by its excess or want. Now cattle, from an inherent cause, point out that there is an abundance of acid in their stomachs, from the fact of their eating earthy matter in this disorder; and I have always observed that, on turning an animal out, the first thing he devours is the earth, or, if in the cow-house, the mud wall: besides, alkalies as well as chalky substances cure it. A very popular remedy is the powder of common slate.

Some look on this disorder as an inflammatory one of the kidneys, but, in my opinion, it is in the produce of the soil, under certain conditional influences; and hundreds of cattle pass over it, without our knowledge, and without any premonitory symptoms whatever. The excretion from the kidneys, when nitric acid is dropped into it, is instantly albuminated, and so it is, if heat is applied. Now this shews that the urine is serous, as this fluid—serum,—when in the blood, holds it in solution. In red-water that arises idiopathically, we never see coagulated blood, but only in hæmaturia occidentalis.—A word or two on artificially manuring our soil, which is now the rage of the day, may be forgiven.

Excesses of any sort do not cause good results: the time may come, when the besprinkling our land with such various imposts may prove a curse instead of a blessing. Our healthy atmosphere may be sown with poisonous effluvia, evolved from products of foreign climes, and diseases enlisted amongst ourselves and our quadrupeds. In short, our soil, year after year, is continually imbuing with poisonous bodies: our seed-wheat is commixed with arsenic and copper, and various other substances, for the prevention of disease.

In a paper sent a few years ago to Professor Sewell, I carried my opinion so far as to say, that the sowing so much arsenic, &c. with the grain was the cause of the late epizootic in our cattle; but, perhaps, ere long such an opinion may be verified in some form or other, as we become more intimately acquainted with the all-searching eye of agricultural chemistry and vegetable physiology. In conclusion, I again repeat, and agree with Mr. Bickford, of Kingsbridge, that I do not see how a thorough acquaintance with the diseases of our different kinds of stock can be obtained at the College, practically; many of which are accidental, and of a subitaneous character, that never can

be admitted inside the walls of our Institution. Now, as to our seeking for a Charter, what will be the resulting good, say we obtain it, without restrictions on the empiric? Let the law be ever so stringent, quackery will still continue. "I do not see," says Mr. Bickford, "that his charter is a safeguard to the surgeon, neither will it be with us: our best *charter* or *safeguard* will be the diffusion of right principles, which will ultimately triumph, and be the death-blow to the ignorant pretender. What was the position of the human surgeon only a hundred years ago? Much worse than the position in which we stand. It is not only necessary that we ourselves should possess, but it is also requisite that our employers should be initiated into the principles of science; for in proportion as the persons by whom we are employed acquire knowledge, in the same ratio is the empiric discarded.

Such I have found to be the case, and I only wish that a necessary sum could be raised to purchase an experimental farm for the College; and, instead of wasting our money for a Charter, that same to be appropriated to the purchase of a few acres of land. I do not wish to be considered arrogant; but should the governors ever determine on such a plan, I would, myself, subscribe towards its fulfilment the sum of £50, to be paid to the proper authorities, for the completion of such a design.

It is my determination, to the best of my knowledge, from time to time, to speak of diseases as they occur under atmospheric circumstances, which so much influence the component parts of our produce and the productions of our soil, in accordance with the site, clime, and soil, from which they germinate.

CASE OF ENCYSTED TUMOUR AT THE BASE OF THE TONGUE IN THE HORSE, FALLING INTO THE RIMA GLOTTIDIS, AND PRODUCING FITS OF PARTIAL ASPHYXIA, CURED BY AN OPERATION.

By Professor DICK.

A BAY horse was purchased by Mr. H. Reid, farmer, Haining, near Polmont, Stirlingshire, at Mid Calder fair, in 1841, for thirty guineas; and shortly after coming into his possession he was observed to cough, which gradually increased till it became very severe and harassing, but without any constitutional disturbance, or any apparently severe local derangement in the organs of respiration.

About eight months ago, when going in the plough, he was

observed to stop suddenly and exhibit symptoms as if he was choking ; and, after making several fruitless attempts to cough and empty the larynx or pharynx of their contents, he stamped with his fore feet, shook his head wildly, and appeared in very great distress from want of breath. He then very suddenly seemed to regain his wind, so as to enable him to resume his work, which he continued to do all that day without any farther annoyance.

On the next morning, about 4 A.M., the man who had charge of the stable, and who slept in the loft above, heard a considerable noise below, and on looking down he observed this horse reeling about in his stall, and immediately afterwards falling down as if dead ; but on returning from the farm-house, whither he had gone to apprise his master of the circumstance, he found the animal considerably recovered, and, in a short time, was able to raise himself on his feet again.

At the accustomed hour of going to work he appeared to be quite well, and was accordingly sent to the field ; but, during the day, he was twice attacked as before, and on being set free from his harness he turned quickly round and fell to the ground. At length, recovering his breath, he again got up, bled a little from both nostrils and mouth, which evidently gave him considerable relief, and, appearing to be again in his usual state, he was put into harness.

In this manner he was attacked every day for about a fortnight, sometimes falling four times in one day. At length his master, supposing him to be on too heavy work, changed him to drawing single harrow. He continued at this for two or three weeks, when it appeared even that work was too much for him ; and he was accordingly laid aside, put into a loose box, and kept on soft food, especially linseed and boiled barley. During all this time, however, he never refused his food ; but latterly, when the fits had been very frequent in their occurrence, he became dull and lost condition. It had also been observed that he had some difficulty in swallowing his water, a great portion of which was returned along the nostrils, mixed up with a considerable quantity of mucus.

After being thus confined for a fortnight he was put out to grass, when he appeared to recover rapidly ; but, about the beginning of August, he became much worse than he had ever been—became unthrifty in his coat—had the fits more frequently and with greater severity. Generally, after a severe paroxysm he broke out into a profuse perspiration—stood dull and dejected—and when he resumed his feeding it was very slowly, and with little relish. In this state he continued until

the 8th of November last, when I accidentally saw him on passing to examine a horse-pond, about the purity of which there happened to be a dispute. Not having time to examine him minutely, I stated that I suspected there was some obstruction in or about the top of the windpipe, and, in the meantime, advised a smart blister to be applied to the throat. Little had been done previously, except bleeding him and giving him soft food. It was a week before the blister was applied; and, in the meantime, he became worse than he had ever been. After the fits he was so much weakened as to be unable to rise for some time, but lay with his legs stretched out and his mouth open, gasping convulsively, and attempting by slow and long-drawn inspirations to obtain relief. After the application of the blister, however, he appeared somewhat relieved from the frequent recurrence of the fits, although, when they did recur, they were equally severe; and in one of them he reared up and fell backward, nearly killing himself, and, by his struggles, endangering all the other horses around him.

Mr. Reid now considering the animal as useless, and being tired of keeping him, sent him here as a subject for experiment or dissection as might be thought advisable; and he was accordingly brought by one of his servants, who informed me that he had performed the journey tolerably well, and had not been so ill as he usually was.

On careful examination no tumour or swelling was felt along any part of the throat externally; but when the larynx was grasped with the hand, the animal was made to cough freely: and, on the ear being placed near the anterior nostrils, a slight sybillous wheezing was heard during ordinary inspiration. On the mouth being widely opened and fixed, and the tongue pulled forward, I requested my assistant to pass his hand along its dorsum to its base, and the superior aperture of the larynx; and on reaching the epiglottis he immediately felt a tumour on the mesial line and in the anterior direction, equalling the size of a pullet's egg. It felt as if immediately under the mucous membrane, attached by a small neck in the folds of the frænum of the epiglottis, and felt at first as if it might be easily torn from its situation. On drawing it outwards the pedicle elongated greatly, but it did not appear to be likely to give way without endangering the neighbouring parts by the force which would have been required. Having satisfied myself fully as to the nature of the case—that the tumour, from the looseness of its connexion, was occasionally jerked over the epiglottis into the glottis, and gave rise to all the symptoms of asphyxia which the animal had previously exhibited, I determined on a removal of the tumour; but its

very deep and circumscribed situation offered several obstacles to the operation. First, the movements of the tongue and other parts would not admit of the use of the knife; and, secondly, the depth and contracted and obscure position of the tumour would not admit of the use of scissors. On reflection I therefore saw that the best plan would be to try some instrument of a form adapted to the peculiarity of the case, and, therefore, ordered an instrument with a handle about eighteen inches in length, with a semilunar cutting edge about an inch and a half in length, to be made with a round, button-like corner, at each extremity, in the form of a chisel, bevelled off to the upper side, having a hole passing obliquely through, as near the cutting edge as possible, through which I passed a doubled portion of tough wire, so as to form a loop beyond the cutting edge. The horse was now cast, and the parts again examined. I then made my assistant pass the loop of wire over the tumour, and draw the tumour over the upper side of the cutting edge of the instrument, while I pressed the instrument back with the one hand, and drew the tumour towards its edge by the wire in my other hand. By this means the mucous membrane was cut close round the tumour, and the whole detached, with the exception of a small portion of cellular membrane, which, in consequence of its toughness, did not readily give way. It was therefore drawn towards the root of the tongue until it was within view, when it was divided by a probe-pointed bistoury, and the tumour completely removed. Little or no hæmorrhage took place; and, on the horse being let up and put into a loose box, he began to eat as if nothing had happened, and has continued daily to improve. During the afternoon of the operation and the following day he had some difficulty of swallowing and a slight frothing of the mouth, with some wheezing in his breathing; but on the following day these symptoms had almost entirely disappeared, and he has since rapidly recovered. His diet was confined chiefly to mashes and gruel. Having continued to improve, he was sent home on Saturday quite well.

I may state that I was aided in my diagnosis in this case by one which occurred at the London Veterinary College while I was attending there, about twenty-five years ago.

A bay horse, affected with symptoms somewhat similar to those described, was sent to the College by a respectable farrier, who lived about twenty miles distant, to see what could be done for him; and, as it was suspected that there was some obstruction about the windpipe or larynx, it was proposed that tracheotomy should be performed, in order that the cause of the disease might be ascertained. To this the farrier's son (who had brought the horse) consented, being given to understand that the operation

was not a very dangerous one. The horse being cast and the windpipe opened, a whalebone probang, with a small piece of sponge on the end of it, was passed downward and upward; and as it passed up through the larynx, the horse gave a violent convulsive struggle, when, as I was resting with my knee against his back, I heard a noise and felt a sudden snap, which, when the animal was unloosed, proved to have been a fracture of the spine, notwithstanding some jokes at the expense of the *Scotsman* when I first mentioned my suspicion. The horse being unable to rise, was of course destroyed, and I, assisted by another student, dissected him. We found on the anterior part of the epiglottis, as in the case I have given, a tumour about the size of a pigeon's egg, connected in the same manner under the mucous membrane by a long loose neck of cellular membrane, which might have been removed in the manner already described, had its existence been indicated previous to the death of the animal.

On examination, the tumour in the case I have operated on has proved to be an encysted or œtheromatous tumour, similar to those found in the human scalp, having a dense fibrous capsule, and containing a quantity of albuminous matter.

AN ESSAY ON THE CONDITION OF HORSES, &c.

By Mr. JAMES TURNER, Regent-street.

[It is with great pleasure that we find ourselves permitted to insert this truly valuable and characteristic Essay on the Condition of Horses. Twenty years have passed since it was first given to the public; and during many a year since that period it has been altogether out of print. Our readers will thank us for availing ourselves of the kind permission of the author to place it once more in that position which it so well deserves to occupy.]

DISEASE undoubtedly renders a great number of horses in this country ineffective, particularly if safety of action, strength and speed are required of them: but there is an evil more prevalent, which more immediately clogs the springs and renders impotent the powers of the horse than even disease itself;—I mean the want of Condition.

The term Condition in respect to horses implies the acquisition of extraordinary strength, accompanied with lightness of the animal frame, by which the muscular fibre is enabled to contract

with the utmost vigour and rapidity, and maintain a continuance of these efforts, thereby propelling the animal machine with the greatest velocity.

I am induced to solicit the attention of the public to an inquiry into the Condition of Horses.

First—Because I am of opinion, that the act of working horses at a quick pace on the road (to say nothing of the field), when out of Condition, is more productive of disease, and of the most formidable disease, than all other causes, notwithstanding so much has been said and written by scientific men, both in and out of the veterinary profession, on the subject of disease being principally engendered by confining the animal in hot stables.

Secondly—The enormous sacrifices often made by the purchasers of high-priced horses, in selling them, only a few months after purchase, at a loss perhaps of 50 per cent., finding them unable to do a common day's work with ease to themselves or pleasure to their owner: such horses are in general hastily condemned by their new masters, and considered delicate, weakly constitutioned, or deficient in mettle. These instances occur repeatedly, without any visible unsoundness.

The deficiency is generally attributed to defective stamina; and, under an impression that the cause is permanent, and that they never can be made to stand work, they are often sold at a very great loss to the proprietor.

Now I will venture to affirm, that nine out of ten of these cases are within the reach of treatment, and that the inability to do an ordinary day's work well does not depend on permanent or immovable causes. Of course, I allude to such horses as cannot be pronounced unsound; and many there are of this class, and in their prime of life, that cannot do a day's work, and repeat it on the following day, half so well as others that might be selected, labouring at the same time under a variety of diseases. This extraordinary difference in the capabilities of horses depends entirely on Condition, although the appearance of many of these ineffective horses, as to their exterior, is often such as to induce their owner to think they are in excellent Condition. Instances of this sort repeatedly occur even with a fine coat, the hide loose, and with the appearance of a moderate proportion of flesh, gayness of spirits, so fresh at exercise as scarcely to be held, and, although kicking up their heels, yet unable to do a day's work half so well as a seasoned post-horse of only ten pounds value. Such horses, when required to work, generally sweat profusely. They perform the first three or four miles of their journey cheerfully, and then begin to flag, rest on the bit, breathe short and quick, falter with their legs, and in the course of a ten or twelve miles

journey, at a moderate pace, become literally tired. When I assert that nine out of ten of these cases of debility proceed from the want of Condition, I do not confine myself alone to the general acceptation of the term Condition, by which is understood, on the turf and in the field, a fit state of the muscular system to perform violent exertion with only moderate fatigue; I go further, for, by repeated experiments on these non-effective subjects, I have found that the defect has its seat in the blood, this important circulating medium being in fault from a want of quality; and to this I attribute the many instances we see of valuable looking horses that, in regard to work, are incapacitated.

The spurious mode of feeding adopted by the breeders of horses, when intended for sale, is productive of most of these cases.

It is a forcing system of dieting, which possesses the power of making the most blood, and consequently the most fat, in the shortest possible time. During this process, work, or even brisk exercise, is studiously avoided, in order that their legs and feet may be in the best trim. Those nutritious articles of food are selected that are the most easy of digestion, that make the most chyle, and load the vascular system with the greatest possible quantity of blood, without any other consideration as to the *quality* of the blood than that of taking care (and which, by the by, is their most especial care) that it shall be *weak*, in order that the young animal, naturally plethoric, and now rendered so in the highest degree artificially, may be kept in health, and avoid inflammatory attacks, which would speedily defeat the object in view.

Fine young sound horses, in this bloated state, come into London for sale. Their unfitness to undergo exertion at this time is well known, and, by way of preparation for work, or rather prevention of disease, a little blood is taken, and a dose of purging physic is administered, and they are immediately afterwards put upon sound hard keep. Their new owners are now naturally eager to try their merits in their several paces. Here, it may be said, too often begins a work of destruction, for, although they are ridden or driven with caution, still, from the feeling and understanding that they are sound and strong, they are usually put to the extremity of their action, yet perhaps only for short distances. But what is too often the consequence of this apparently moderate act of exertion? The perspiration which follows is usually most profuse. Such a sweat ensues, as the animal, in all probability, had never before experienced in his life. The next day he refuses his corn, coughs, hangs down his head, appears dull, breathes short and quick, the mouth and tongue hot, and, in short, such an attack

of fever and inflammation of the lungs as would destroy the animal in a few days or a week, unless arrested by active treatment. The horse is supposed to have taken cold, when in truth he has met his death by an act of exertion which, to a horse in Condition would have been only exercise. Horses in this manner out of Condition are in good health and spirits, if kept without work, but are soon unwell when forced to work. A young horse that has been fed for several months in the way I have described, and then required to do an ordinary day's work, is labouring under every possible disadvantage that can be imagined. Not only are his muscles soft, flabby, and out of tone from the want of practice, but each muscle, and every fibre of it, is encompassed and clogged with a superfluous weight—a layer of cellular structure, which is deposited and kept there by his mode of living, and this superfluity pervades the whole frame.

The oppression falls the most heavily on the muscles connected with respiration, and on the heart, which is itself a muscle. This organ, I have invariably found on the dissection of such horses, is encumbered more in proportion than the other parts.

In addition to the oppressed state of the muscular system, the whole bloodvessel-system is overcharged, and, what is worse than all, with *weak* blood. If the quantum were the only fault, the remedy would be immediate by the lancet: but it is materially defective in *quality*; and, as all parts proceed from the blood, it follows that even the contracting fibres themselves of the oppressed muscles are deficient in strength and vigour.

I have been led to an investigation of the quality of the blood of horses, in various degrees of condition, from a difficulty I have often met with in practice to account for cases of muscular debility, and in which subjects I have had every reason to believe there existed no defect in their solids.

In the course of experiments I have ascertained that there is not only a great variation in the relative proportions of the several parts of the blood, according to the degree of Condition in the horse, but a most material difference in the quality of certain parts of it, and which I intend at a future opportunity more fully to point out.

But to return to the oppressed state of the muscular frame. The animal is called upon to gallop at speed, although perhaps only for a short distance. The circulation of the blood is accelerated in consequence; the heart beats with rapidity; the blood, in the same proportion and with the same velocity, is sent into the lungs, and the muscles of respiration are as suddenly required to expand the chest. They are, perhaps, equal to this at the first

impetus ; but from the load upon them, their want of practice, and the debilitated state of their fibres, they are unequal to a continuance of these efforts ; and the volume of blood, as before-mentioned, within the system, being too great, a congestion of blood in some of the vessels of the lungs, or about the heart, is the consequence, and which not unfrequently proves fatal. At the best, it often leaves a cough, that even, with the aid of good treatment, requires months to remove.

Much has been said of late on the ventilation of stables. I am as much disposed as any one to attach importance to a free circulation of air in a stable, accompanied with a due attention to its temperature ; but the fatality incident to young horses on their first coming to London has been hitherto chiefly attributed to the heated and impure atmosphere of the London stables. This, I believe, does contribute ; but, when it is considered that these horses arrive in London with fine, sleek, short coats, a point to which the breeder alway looks (and this is not to be obtained without warmth ; in fact, many of their stables are kept at as high a temperature as any in London), I am led to conclude that these casualties, which are so severely felt by the public, and more particularly by the London dealers, in their fresh purchases of young horses, are to be traced to another source, and to one more formidable than the change of stables.

The truth is, that many of these fine young horses arrive in London in a state as incapable of exertion as a stall-fed bullock, occasioned by pampered living and long-continued rest.

Instances of death that have occurred soon after purchase, from causes before stated, have too often been the subjects of action in our courts of law, and as often have the worthy judges and juries laboured to elicit the truth and assess the damages on the offending party. Not so often, however, in my humble opinion, have they been successful in their endeavours, owing to two circumstances intimately connected with these unfortunate cases. In the first place, in consequence of the prejudice generally entertained against horse-dealers, the animal in question is presumed to have been defective before the sale ; and, secondly, this erroneous presumption appears made out by the state of the internal parts ; for, on dissection, they often seem literally rotten, although perhaps the horse may have been sold by a dealer to a gentleman only one week before at a large sum. Now the fact is, that, notwithstanding the diseased state of the lungs, the horse might have been perfectly sound the preceding week when sold ; so rapidly do the lungs of horses lose their texture when attacked with inflammation. The consequences have often been, that the industrious dealer has not only been saddled with the loss of the horse, but

with all the law expenses, while the opulent purchaser, the very man who killed the horse, has walked off unhurt.

The following are some of the diseases which are often the result, directly or indirectly, of exposing a horse to much exertion when out of condition : viz.

General inflammatory fever.

Inflammation of the lungs.

Inflammation of the heart.

Cough situated in the lungs.

Cough situated in the throat.

Chronic shortness of breath, or thick wind.

Catarrh and sore throat.

Loss of appetite.

Inflamed eyes, and, not unfrequently, incurable lameness.

These maladies are also frequently occasioned by other causes, but this is one which has been overlooked, or at least the bearings of it have not been sufficiently noticed by those who have undertaken to inquire into the primary causes of the most formidable diseases to which the horse is liable.

When I speak of the defective state of the blood of a horse out of Condition, I am anxious that it may not be supposed that I am reverting to the old exploded pathology of humours in the blood, for I do not consider the blood in a state of disease, however far the animal's state may be from that which is considered good condition, whether bloated with loose flesh, or very poor. In either case, the blood circulating in the vessels of the animal furnishes all the supply to the solids and the system generally, which is necessary for its existence and ordinary functions.

Disease is not of frequent occurrence, even with the fat, bloated horse, while he is kept almost in a quiescent state. From the circumstance of his food (notwithstanding its nutritive and fattening quality) being relaxing and cooling, it has a tendency to soften the muscular fibre, and moderate the susceptibility of the system to inflammation : therefore I consider the blood of such horses not only free from disease, but even faultless, while they are allowed to live in idleness.

As respects the power of the constitution to preserve itself in health, although enveloped in fat, we have familiar instances daily before us of prize cattle, fancy dogs of the domestic class, and some men whose fat alone would exceed in weight all the rest of their body : but it is equally well known that these subjects can bear no exertion ; and, how soon are they irrecoverably lost when by any accidental circumstance the system becomes suddenly agitated !

If an extremely fat man is attacked with fever, his chances against recovery are as two to one in comparison with a lean man. If he breaks his leg, his case is by far more critical than that of the thin man with the same extent of injury.

The fact is simply this,—all may go well with the fat man, while nothing occurs to suddenly agitate his arterial system. Just so with a horse out of Condition. While he is not heated, and so long as his weak blood is not hurried through his soft frame beyond a certain ratio, all is right; but the very first act of exertion has a tendency to disturb the balance of the circulation, by causing an accumulation and congestion of blood in the lungs, in the manner I have before described.

With regard to the defective quality of the blood in these cases, I repeat, that it is not disease, but weakness of some of its component parts, which are more particularly essential in the formation of the contracting fibre. Hence arises that langour and muscular debility so often evinced by the horse in riding him a journey when out of Condition.

When I reflect on the notorious fact, that the worn-down, diseased £15 post-horse, from his muscles being hard, and the blood which circulates in his attenuated frame being rich and strong in quality, is twice as effective as another horse in the prime of life, sound, and in the market worth £100, whose muscles are soft, and whose vessels are distended with weak blood, it fixes in my mind a conviction, that the act of working horses when out of Condition, without a sufficient preparation, not only lays the foundation for the worst diseases to which the animal is liable, but has also the effect of misleading men's judgment when estimating the *value* of their horse, as the performances of the animal, under such circumstances, form no criterion of his real merit.

I could enumerate hundreds of instances that have occurred within my own observation, of horses having been given away by their owners for petty sums, by no means equivalent to their value, under a supposition that they were bad horses, when by the aid of a little management they have afterwards proved lasting specimens of perfection. I have known this mistake happen to men famed for their judgment in horses; but among those who are not familiar with the horse, these sacrifices occur daily.

It now remains to be shewn, what plan of preparation is necessary to enable a horse to do his work with ease to himself and pleasure to his owner, and which may have the effect, upon the animal being disencumbered, of eliciting powers that otherwise might have remained latent.

[This subject will be resumed at a future period.]

ON THE EPIZOOTIC DISEASES OF CATTLE, SHEEP, AND SWINE.

By W. YOUTT.

[Continued from the New Series, No. 8, p. 451, and the Old Series, vol. xv, No. 176.]

OUR history of the epizootic diseases of cattle has been discontinued during the last four months on account of our encouraging the hope that we might be permitted to have access to the numerous communications on this important subject which were sent to the Royal Agricultural Society from every part of the kingdom. This hope has been realized, and we are now engaged in a series of researches respecting the malady among cattle that prevailed 1839-40. We will exert ourselves diligently and honourably in the accomplishment of our task.

The fairest and the most advantageous course we can pursue is to select some district as our starting-point, and to make ourselves masters of its locality, soil, and prevalent and epidemic diseases. We cannot select a better locality than the districts north of the Tweed. Professor Dick has given us an interesting account of the disease which has occurred in his portion of the country. According to him, as it has been described in a former Number, it is a slight influenza or catarrh, attended with blisters about the nostrils, upper lip, tongue, and gums, and also occasionally upon the teats and about the heels, and at the interdigital space in front, above, and between the hoofs. In the mouth the cuticle peels off, but is reproduced in three or four days. A dry scab is then formed, which heals beneath, and the animal is quite well in about a week. There is little if any fever, and the pulse commonly ranges from 50 to 60. The breathing is not much affected, but the appetite is considerably impaired, principally from the state of the mouth. In some cases there is considerable constipation, and the pulse rises to more than 80. When the teats are blistered, great care is necessary in the milking, so as not to excite any considerable inflammation that may extend to the udder and produce serious disease. The udder usually heals if it is washed daily with a solution of alum, and the teats anointed with a little lard or palm oil.

The hind feet are most commonly affected, on account of the filth and moisture to which they are exposed; and, if they are neglected, inflammation frequently ensues, and deep and extensive sloughings, which prove troublesome and tedious, and lead to the casting of the hoof.

When there is much inflammation or soreness about the feet, poultices of bran should be applied, or lotions of copper and zinc. When there is much inflammation, a lotion of acetate of lead should be mixed with the poultice.

When the disease first makes its appearance, a pound of Epsom salts with four ounces of sulphur, and half the quantity repeated if the first does not operate, or, if necessary, a drachm of croton-cake added to this, will prove an excellent remedy. If the pulse rises, antimonial powder and nitre should be given night and morning. Symptoms of red-water will be removed by laxative medicines, and sulphate of iron will be indicated if the pulse falls. The mouth should be gargled two or three times a-day with a solution of alum, and one of copper may be applied to the feet two or three times every day. Bleeding is seldom necessary, as the disease is rather inclined to a typhoid character, and the debility induced by bleeding increases the tendency of the disease to assume this character, and causes the blisters to ulcerate and slough. Moreover, from the weak state to which the animal is reduced in consequence of its tongue and gums preventing its taking food for one, two, or three days, it is evident that the bleeding is not admissible, unless acute inflammation occurs.

Great care is necessary in nursing the animal with gruel and soft food. Raw turnips may be given in thin slices, and every care should be taken to supply the animal with clean straw.

The same treatment is requisite for sheep and pigs, the dose of the medicine being about one-sixth part.

There is little change, generally speaking, in the character of the milk, except abscesses appear in the udder. If the cows do not give so much milk when they are ill, it is chiefly because they are not able to take so much food. The beef is perfectly sound; and, except the blistered parts about the mouth, there will be no other marked appearances observed.

After this interesting account of the epidemic by Professor Dick, little occurs deserving of notice until we arrive on the borders of England, except that in Berwick-on-Tweed is the residence of John S. Donaldson Selby, Esq., and he gives the following description of the rise and progress of the disease on his farm.

The epidemic first made its appearance among his cows and feeding cattle on or about the 20th of December, 1840, and extended to the cattle of all ages, and also to the sheep, and, in one case, to a pig that was shut up to feed, and to which some of the milk from a diseased cow had been given. The rest of the pigs, to the number of forty, being in the fold-yards, escaped.

His farms are in the parish of Arcroft and county of North Durham, near Berwick-on-Tweed.

The ground is undulated, and sloping to the sea shore, by which it is bounded on the east for about a mile.

It is not screened at all, but open to every wind, and particularly to the east, north, south-east, and south-west winds. There is very little wood, and no hedge-row trees, a few strips of plantation being all the shelter on the farm. The situation is dry. There are few springs, and no running water on the farms.

The surface soil is about one-third clay and one-third good rich loam, and the remainder, being that next to the sea, a light sand and gravelly soil. The sub-stratum or rocks that prevail are sandstone, limestone, and coal, alternating and dipping to the south-east, under the sea. There are no rivers, ponds, nor marshes on the farm*.

When the epidemic commenced, the frost was severe, and it was so during the greater part of the time of the continuance of the disease. The prevailing wind was from the south-east and east.

The cattle had not been in communication with any other animals, and he was very particular in preventing any such communication.

They had not travelled on any public road, and there was no imaginable mode in which the disease could have been so communicated to his cattle.

The first animal that exhibited the disease was a cow, eight years old, and in calf, but giving milk. She was, however, in good condition, and had been fed on hay, straw, and turnips (Swedes). The next were several queys, two and a half years old, feeding for the butcher on oil-cake and Swedes. These last were in fold-yards, half a mile from where the cow was; and what is singular is, that of three cows in the same house two escaped altogether, being the only animals on the farms that did so. They were forward in calf, and have since calved.

Both of these animals were young and full grown, and suffered alike.

The disorder first manifested itself by the animal becoming dull and refusing its food; frothing and foaming at the mouth, and becoming lame in all its feet; but how soon these symptoms appeared after the animal was infected cannot be determined. The symptoms were all he had to ascertain the presence of the disorder.

The whole of his cattle had their feet and mouths affected simultaneously, or so nearly so as to make it impossible to state

* In the progress of our inquiry we shall attend comparatively little to the nature, or dryness, or moisture of the soil, or to the prevalence of certain winds, for we shall soon find that they had little or nothing to do with the character or prevalence of the epidemic.

any difference. It did not appear that the mouths of the sheep were much if at all affected, but their feet were very bad, and most of his ewes have cast their hoofs and got new ones. For a fortnight they went on their knees, and had to be very carefully fed and attended to. He had ten score of ewes, and few escaped.

He had had no case, and he heard of none, of an animal being a second time affected.

His cattle were, from the beginning, fed on turnips, oil-cake, and straw; the cows on hay and turnips; and the sheep on turnips, oil-cake, split-beans, and bran, with salt. To the sheep he gave no medicine whatever, and did not lose one. To the cattle he gave, on the first appearance of the disease, the common aperient drink—Epsom salts, sulphur, and nitre. He bled in the first two cases; but afterwards abandoned the use of the lancet, finding that those that had been bled were longest in recovering.

He did not lose one animal by the disease, though some of his neighbours did.

The quantity of milk was diminished, although the udder was not affected. His cows were mostly advanced in calf at the time, and one has calved since—one of the two that escaped the disease.

The two cows that escaped were pregnant and near their time of calving; but others pregnant, though not so near the time of calving, have taken the disorder.

He heard that the disease has caused abortion; but he could not speak to this from his own knowledge.

He knew of no instance; his cows that had the disease not having yet calved.

No cutaneous eruptions have appeared amongst his stock.

The cattle suffered in condition in proportion to the mildness or severity of the attack, and the duration of the worst symptoms; but on the whole he is of opinion that his cattle suffered very little in condition, and now no trace of it remains among them. The sheep are still suffering from lameness and tenderness in the feet, having lost their hoofs, and he has some fear lest the number of lambs may be materially affected. He is doing all he can to restore the condition of the ewes, who suffered more than any other animals from the severity of the inflammation in the feet.

He has on his farms twenty-six horses, of all kinds; not one of which has been in any way ill or disordered during or since the appearance of the epidemic.

They have not been attacked by influenza this winter, though this complaint is often common amongst the farm horses.

The epidemic continued among his cattle about twenty-six or twenty-eight days, and the sheep were seized about fourteen

days later than the cattle, and may be said to be suffering yet, though he has had no new cases for a fortnight.

The disease may be said to have disappeared from his farms about the 28th of January.

His farms are situated in the township of Chiswick, parish of Arcroft and county of Durham, on the sea coast, five miles from the mouth of the river Tweed. There are extensive salt marshes to the south-east, about three miles distant, and some low and wet marshy grounds about a mile to the south and east; but no marsh, pond, nor river, and very little water of any kind, is upon his farms, which contain about six hundred acres.

We proceed in a southern direction to the county of Northumberland and the parish of Kirk Newton. Mr. G. A. Guy has a considerable farm there, rather hilly, dry, open, and undulating; a turnip loam, with gravel and some clay, but no marshes. The weather mild, with light southerly winds. No direct communication with any other sheep and cattle; but the supposed infection was as follows:—

On the 30th of January the sheep-flock was removed for two days to a part of the farm on which there was a flock of diseased sheep, three-quarters of a mile to the windward of them. His flock was divided into parts, in one of which the disease broke out on the third morning, and in the other on the fourth, and then pursued its path through both alike. The cattle were likewise affected. The mouths and tongues of the cattle were the worst, and the feet of the sheep. Animals are rarely attacked a second time by this disease, except that the sores on the feet of the sheep do frequently break out afresh.

Salts, with sulphur and nitre, were given both to the cattle and sheep. The mouths of the cattle were washed with a solution of alum, and a caustic preparation used for the hoofs of the sheep; but in no instance did the sheep that were thus treated recover more quickly than those that were left alone.

Mr. Guy did not lose a patient, but his flock was much reduced in condition, and some ewes could not stand for three or four days. In some instances his neighbours' and his own cows yielded their milk in the usual quantities—in others it diminished, and almost disappeared while the cow was in any considerable state of fever; but there was no case in which the milk did not return when the cow recovered.

There has seldom been any case of the produce of females labouring under the disease seeming to be much affected; but a sow that was very ill some time before farrowing, continued poor

and weak, and her pigs were exceedingly small and unhealthy, and most of them died. All the sucking calves, as well as all calves fed on the milk of infected cows, throve well. The feet of the ewes were often exceedingly troublesome: they may appear to heal, but they break out from time to time; and, often, a fortnight passes away, and they are almost as lame as at first. If the disease does not speedily pass over, the sheep are apt to lose (as was the case with Mr. Guy) all the condition which they had previously gained, and his kyloes, which had been fed upon Swedish turnips and oil-cake during the winter, were not fatter than when they took the disease four months before.

Mr. Guy concludes by stating, that, although this malady seems to be highly contagious when a diseased animal comes in contact with a sound one, and feeds on the same pasture, or pasture that has been trodden upon by infected cattle, and although the principle of infection seems to be in many cases conveyed by the atmosphere, yet there is a great deal of caprice about the matter. In his farm two large lots of hoggets were divided from each other by a thin hedge, and those on one side of the hedge were plainly infected, yet three weeks passed, and the disease was not communicated. He knew also of several cases in which the ewes escaped, while the hoggets were affected. In other situations the contrary occurred.

Another agriculturist, of the name of Hunt, and living in the same village, likewise communicated with the Agricultural Society. He says, that there cannot be much difference with regard to the soil, but there may with respect to the general treatment and some other particulars, of which at first we should scarcely dream. Mr. Hunt had seventy-six head of cattle, in all but four of whom the symptoms were very mild. They first appeared at the latter end of October, three months before they were developed in the stock of Mr. Guy. The milch cows were earliest affected, and, after that, the fat cattle began to fail. It spread through the whole herd, with the exception of four beasts. It was a damp situation in which the cows were when they first took the disease, but all the young cattle were in the fold-yard when they were attacked.

The weather on the first appearance of the epidemic was moist and damp, and the wind N.E. His cattle had no communication with any others. They never travelled along any road, or were huddled in any place where diseased cattle had previously been: but they were attended by a person who was employed among cattle, and whom he much blamed for bringing the infection into his yard. This patient was the first cow in which it

appeared, and that was a few days after calving. She had considerable inflammation of the udder. She had two calves, neither of whom were affected by the disease.

It began in the mouth : her tongue was much blistered, and there was considerable frothing from the mouth. The animals that were more than usually bad in the mouth very seldom had inflammation of the feet to any great extent, and *vice versâ*. There was no second attack of the disease among any of them.

He administered a saline purgative to each, and bathed the mouth with some astringent, which was also used for the feet.

The udders were considerably affected, and some of them for awhile lost one of the quarters ; but the swelling soon subsided as the milk returned. Pregnancy bestowed no immunity from the disease. One cow suckled two calves, and neither of them was infected. The disease never appeared in the feet of any sucking animal. The cattle that were diseased lost very little condition, and have all fed well since ; and there were not any diseased horses on the farm. The epidemic went through the whole of the cattle in about a month, and then disappeared. The sheep-stock was at no time affected, although the disease was very prevalent among the flocks in the neighbourhood.

Mr. Guy has kindly favoured me with a recent communication on this point. He says, that, in the year after the occurrences just related, he bought a large lot of kiloes from Scotland, which reached his farm with the disease strong upon them, and which he put among his other stock without the slightest scruple. The disease appeared among all the kiloes and some young quays that were among them ; but neither the elder cattle nor the sheep took it in a single instance. He did not house any of them, but only gave to a few of the worst a half-pound dose of salts, and they soon recovered. None of them were ill more than four or five days, and in some of them the appetite was not in the slightest degree suspended. The whole lot consisted of about fifty beasts.

Some of this gentleman's ewes, that were very ill in 1841, brought up their lambs badly in the next spring ; and several of them never quite recovered, but wasted away and died. No very marked disease or cause of wasting was discoverable when they were examined by the butcher after death.

The reply of Mr. William Jobson, of Chillingham Newtown, will conclude our account of Northumberland.

The epidemic prevailed among part of his cattle, all his pigs, and part of his sheep.

It also appeared on many farms within a mile of his, as well

as on many others at a greater distance, while it totally passed several intervening ones.

It first made its appearance in a lot of thirteen two-year-old steers, that were brought from a pasture, twelve miles distant, to his farm, on the 20th of October, 1840, and put into a grass field, where turnips were laid down for them. On the morning of the 22d, two of them were brought home unwell, and during that day the other eleven were all affected with the disease. It afterwards extended to more of his cattle, all his pigs, and part his sheep.

The weather at the time the disease began was open, with occasional slight showers of rain, but no frost until a long time afterwards. When the frost set in, it was thought that it would have stopped the farther progress of the disease, but the sheep took ill after the frost commenced.

The thirteen steers that were first attacked with the disorder had no chance of having had communication with other diseased animals, but they travelled along a road, on their way home, on which it was afterwards found that two or three lots of diseased cattle had passed three days before; and as they were halted for half an hour at a part of the road where there is grass by the road-side, it is conjectured that some of the diseased cattle may have rested, and eaten grass at that place, and on which his cattle afterwards browsed. What rendered this almost certain was, that they were in perfect health on the morning of the 20th of October, when they were brought from their pasture: and that the field was free from infection is equally certain, as nine cattle and eight scores of sheep were sent to the pasture on the same day on which the thirteen steers left it. These nine cattle remained in it until the 9th of December, and the eight scores of sheep until the 16th of January, all of which continued in perfect health, never having been permitted to mix with or come near those that were diseased.

As to the liability of attack, there did not seem much difference between young and old, with the exception of calves getting milk with impunity from diseased cows. The younger animals, however, were less severely attacked than the older ones, and got sooner well.

The earliest symptoms of disease were, usually, the animal being dull, forsaking its food, and being unwilling to move—a saliva issuing from the mouth, and a stiffness being evident in the legs. The thirteen steers were all seized on the second day after the supposed infection. Seventeen other cattle got among them during the night previous to their having been observed to be

ill, five of which became ill on the second day, six more on the third day, two on the fourth day, and the remaining four on the fifth day.

The disease most frequently began in the mouth in cattle, although in some cases in both mouth and feet at the same time; but in sheep it was first discovered in the feet.

He was not aware of any animals having had a second attack, although he had heard others allege that they had known it: he was of opinion that those animals had never perfectly recovered, and that the disease had shewn itself more by falling afterwards into the legs and feet than at first, and particularly so in sheep, which continue much longer ill than cattle.

He had had about sixty cases of cattle, twenty of pigs, and six hundred sheep.

As soon as the cattle were observed to be ill, they were brought into a shed; were drenched, according to their age, with from three-quarters to one lb. of Epsom salts, four oz. of sulphur, and eight oz. of treacle, their mouths being at the same time washed with a solution of alum. At first they had oatmeal gruel or linseed infusion given to them, and sliced turnips as soon as they would eat food. A few of the sheep that were first taken ill had also similar medicine given; but, when they became numerous, all that could be done was to remove them into a clean grass-field, and cut turnips for them, the mouths of many of them being sore.

He had only one death among those which were attacked, and this was a heifer of three years old, which cast two calves a month before her time, and did not cleanse. He attributed her death to this more than to the effects of the disease, of which she seemed nearly well before abortion took place.

The quantity of milk in cows certainly diminished for a few days after their being attacked, but soon returned to its former quantity after the cow got well. He had only one case where the udder was affected by inflammation. It was that of a cow that was suckling a calf; she was intended to be dried, and had afterwards been put up to fatten. The calf was therefore taken from her when she was attacked.

Females, when pregnant, or when giving milk, seemed to have been affected equally with others.

He had only one case of abortion, and that at the eighth month, and another of a cow bringing a dead calf at its full time.

He did not know of the progeny of any females affected with the disease shewing it at the time of birth. On the contrary, his calves, with the exception of the two cases mentioned above, were healthy at the time of being calved, and have continued so ever

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since, although the dams had been previously very severely affected.

He had not known or heard of any newly-born animal having been affected, or of those that have sucked or otherwise obtained the milk of diseased cows. Some persons boiled the milk given to calves, which, probably, was a safe precaution.

It has not appeared in the feet or elsewhere in young sucking animals. In one instance of a calf of nine months old, it had a very slight attack.

It reduced them much in condition, but after they got well they laid on flesh very quickly.

Not any of his horses were ill before, during, or since the cattle epidemic.

It had not quite disappeared among the sheep at the beginning of March 1841, but there were no cases among the cattle and pigs for more than two months before. There were yet more than forty head of cattle and four hundred sheep on the farm which had not been attacked. They have been kept carefully apart from the infected portion of the stock.

In conclusion, Mr. Jobson offers it as his firm opinion, that the disease is *entirely infectious*: he had not seen, in the experience which he had had with his own stock, or what he had heard of others, any cause to think otherwise. Wherever the animals have been kept carefully out of the way of diseased ones, or of persons who have been occupied among those which were diseased, they have been free from the complaint.

The next Number will contain an account of the Epidemic in Durham, Cumberland, and Westmoreland; and Mr. Youatt will be thankful for communications respecting these counties.

ON THE POWER OF NATURE TO RALLY AFTER DISEASE -- ELECTRICAL PHENOMENA — THE VALUE OF THE VAPOUR BATH—ON BLEEDING.

By Mr. MOGFORD, Guernsey.

THE case of Mr. Bertie's horse (Harkaway), which I sent you for insertion in the Number for December 1841, may be the means of eliciting some valuable hints from a few of your correspondents. At the time of writing the horse was very low in flesh; and, after the ulcers before described had healed, he had an inflammatory

attack of the mucous membrane of the bowels, in which there were no tubercles, but an immense quantity of lymph. The pulse having a very inflammatory jerk, I took six quarts of blood from him in a very copious stream, which weakened him so much as to cause him to require support: he then fell into a profuse perspiration, and soon after rallied.

The horse gradually recovered, and was purchased by Captain Byron—a near relative to our poetical leviathan—and was put in training under the direction of one of Mr. Field's "fast-going ones*," but who, though a good theoretical trainer and rider, and possessing some knowledge of turf matters, was comparatively ignorant of practical scientific training.

Poor Harkaway was *overdone*; but even in this plight he ran the winner of the Queen's Cup to half a head. I merely state this to shew how nature will rally when put all right. The gallant owner has entrusted the horse to my care for the last five months, and he is now, to all appearance, in perfect health.

One phenomenon, however, is worthy of notice, viz., when friction is used, the body throws off a quantity of phosphoric matter, which shews itself in various ways, according to the instrument used. If it is dressed with whalebone *dandy*, it has the appearance of phosphorus rubbed on a wall in a darkened room; if with a horse-brush, the hair of which is confined by wire, it throws out sparks; if rubbed briskly with the fingers, it shews the light, and emits sparks also. I believe it will be found to be the case with horses that have not had the strangles in the regular way, that phosphoric matter does accumulate in the system to a great extent (which I have before alluded to), and that this, with hard work, bad keep, and foul air, is the hot-bed, if not the real cause, of farcy and glanders; or if not, why is there so much diversity of opinion as to the infection or non-infection of this plague among horses? If the combustible is within, it only wants the application of some exciting cause to exhibit itself; but, if there is no powder, the flint may strike in vain.

These observations are the result of many years' experience; and perhaps at some future time, with your permission, I may be tempted to enlarge upon this topic, so interesting and important to the development of veterinary science.

Perhaps you will also suffer me to allude briefly to one of the remedies used in the above case, viz., the vapour bath. I am induced to do so from reading with some surprise, in your last Number, a description of a vapour bath, as a new invention, but in no respect differing, except in size, from what I have had

* Blackwood.

in use for several years; and which, had I been aware that it had been so little known, should certainly have been communicated to your Journal long ago.

I was in the habit of using this remedy for many years: first, in the form of a steam-boiler, with a hole through the centre, placed on a stove or charcoal furnace; the horse being covered with blankets, sustained by hoops, &c. But for the last nine years I have used a horse-box, covered over, when I wanted it for a hot bath, precisely in the manner represented by Mr. Field, whose father (one of the best operators I ever saw) I am proud to say I had the honour of being acquainted with more than forty years ago. It may be truly said of him, that he was the Sir Astley among veterinarians; and I am sure the profession will feel indebted to his son for publishing to the world his vapour bath, which is certainly on a grander scale than mine; but the principle is the same, and it is equally adapted to the purpose for which it is required.

My apparatus consists simply of a shop stove, with a boiler on the top, part of which enters the stove, in the manner of beer warmers, and an iron flue goes through the wall to carry off the smoke, with a stop-cock to regulate the steam, in order to prevent scalding. When I want to foment any particular part, the steam is conveyed to it by a metallic pipe passing through a hole in the side of the box: these holes are, of course, stopped up when I use the vapour-bath.

One of the most extraordinary cures in the whole course of my experience was effected by this plan. A mare had run away at full speed with a cart, and, coming in contact with a tree, dislocated her shoulder by the concussion. She recovered, with the loss, however, of one eye. She was then the property of Colonel Brock, of this island; she now goes in a job-carriage, and is quite sound. After being placed in the box, she was supported there a considerable time (being unable to move) by means of a sling passed under her belly, and fastened to each side of the box. This is, perhaps, the best kind of support in use.

I also use the box as a cold water bath for the feet, by simply placing a slip of wood across the centre of the bottom of the box.

In 1836, the influenza, which was then very prevalent in this island, was accompanied by great prostration of strength and œdematous swellings; and I attribute my universal success in its treatment to the use of the vapour bath.

One or two cases are worth noticing. Messrs. Guerin Brothers had an old horse that was covered with these immense swellings all over the body, and appeared, when I saw him, to

be taking his last gasp. I seized a tin saucepan, knocked off the handle, and introduced it into the windpipe: this, of course, immediately relieved his breathing.

A similar case happened about the same time at Mr. Lihou's: the handle of an iron saucepan answered equally well. The former horse was killed about two years ago, being quite worn out; the latter is still living, and well.

Perhaps you will permit me to add, while on this head, that I could have wished that some general directions had been given by the assembly of practitioners that took place on the reading of the Professor's paper in 1836. This might, I think, have reconciled the various opinions that then prevailed as to the propriety or impropriety of bleeding; I mean the exertion of due observation and careful pressure of the finger on the artery. If undue pressure is applied when the pulse is very weak, and from 80 to 100 or more, I have found a tolerably full pulse of 40 or 50, and so on. For my own part, I cannot say I have ever found any bad consequences result from bleeding at the commencement of disease; but of more than a hundred cases that occurred during the past year, 1842, I bled only two, and lost none.

[To be continued.]

ON MR. FIELD'S VAPOUR BATH.

By Mr. JAMES ANDERSON, V.S.

Gentlemen, — THE old proverb, "It is a good horse that never stumbles," is verified by the compositor in my communication in your last Number, page 6. He hath stumbled over "*Quantity of Nitrogen in certain Foods:*" This should have been inserted as a 7th line, and heading the Table of Alimentary Principles. The reader is requested to enter the above omission with a pen in the proper place.

To err is human, to forgive divine—

The printer's devil at Christmas gets some wine.

In reference to Mr. Field's vapour bath for horses: for the last fourteen years I have employed the vapour bath in human practice, also to dogs, &c. I have used warm air, camphor, æther, opium, tar, chlorine, and sulphur, &c. (sulphur and other minerals cannot be raised with vapour, they requiring a dry or fumigating

bath). In my experience they have afforded great relief, and frequently a permanent cure in chronic rheumatisms, catarrh, dropsical swellings, nervous irritability, paralytic affections, psora and mange, glandular obstructions, painful swellings, weakness and stiffness in the joints, indigestion, scirrhus tumours, and diseases of the skin. If we may judge from analogy, such a powerful agent, in the hands of an intelligent practitioner, no doubt will prove of singular service in the cure of many a disease to which the lower animals are liable.

With due deference to Mr. Field's bath, I find a most material apparatus wanting, namely, a disperser; that is, an oblong box with a lid and hinge, the whole extent of the lid perforated like a shower-bath. The connecting tube or tubes conveying the vapour should be introduced through an orifice into one or both ends of the disperser. The vapour, in passing through the holes in the lid, is equally diffused in the bath, and not in a torrent of hot steam issuing from the mouth of a tube acting on one particular part of the patient.

Again; if you do not scald the horse, you can only give a simple vapour-bath, as the camphor, &c. is put into the disperser, which ought to form part of the bottom of the bathing horse-box.

I told you in my last there was latent caloric among us: already the steam is up, *with safety valves and connecting tubes*.

Leicester,
5th January, 1843.

Mr. MAYER, *Sen. on Mr. BICKFORD.*

Newcastle, Jan. 10, 1843.

Dear Sir,—IN reading over Mr. Bickford's communication to your Journal of this month, I was much surprised to find, in allusion to Sir James Graham, the epithet "recreant whig" applied to him.

Now, I was not before aware that the pages of THE VETERINARIAN were ever intended to convey the remotest atom of political feeling, but have always considered it ground sacred to science, where men of all shades of political and religious principles could meet and extend the right hand of fellowship, casting an eye of brotherly affection upon each other.

Sir James Graham is not the first whig, nor will he be the last, whom the force of circumstances and the aspect of the times have compelled to range themselves under the conservative banners of the noble duke and Sir Robert Peel.

The time has arrived, when men of property must array themselves against men of no property, as a matter of self-defence—when those who value the permanent blessings of a monarchical government will have to come into fearful collision for its support with a party steadily and resolutely pushing on for the establishment of republican and infidel principles.

Should that day arrive, sure I am (or I mistake the loyalty of our professional body) there would not be found a single man who would not rally around our beloved and youthful sovereign for her defence, and that of our glorious constitution; and even Mr. Bickford would not be last in shouldering his musket on such an occasion.

Sir James Graham, like a wise man, “has taken time by the forelock,” and thinks prevention better than cure. May he and his worthy colleagues succeed: they have an arduous and not a very enviable task before them.

Your kindly inserting this letter in your next month’s Journal will much oblige, your’s sincerely,

THOMAS MAYER, Sen. V.S.

REPLY TO MR. REVIS,

By Mr. H. W. SPARROW, V.S., Market Place, New Malton.

Sir,—In a late number of *THE VETERINARIAN*, I find an attack made by Mr. L. Revis, in favour of a Mr. G. Haliday, —both veterinary surgeons—on an article inserted by me in the September No. of this periodical, and my motive for inserting which was the desire to expose empirics.

Had the person who wrote the letter for Mr. Revis also added his name, I should then have entered into further detail, well knowing the production not to be from Mr. Revis’s own pen.

The fact of the case is this:—I commenced practice in Malton a twelvemonth ago, having had letters of introduction to W. Allen, Esq. of this town, who both breeds and trains race-horses. I have the honour to be employed by this gentleman, and also other influential men; the consequence is, that I am a sad annoyance to both these veterinary surgeons, of whom I will take no far-

ther notice than to tell them that they shall never find me disgracing the profession to which I have the honour to belong.

I am, Sir, your very obedient servant.

[Having admitted the letter of Mr. Revis into our Journal, we are compelled to insert the reply of Mr. Sparrow. Here the matter must drop. We have nobler work to do than needlessly and absurdly to quarrel with each other.—Y.]

A CASE OF DYSENTERY AND STAKING IN A COW.

By Mr. W. A. CARTWRIGHT, V.S. Whitchurch, Salop.

ON the 1st July, 1842, about six P.M., I was called to attend a cow that was ill. The night previously she was apparently well, but this morning she was quite off her milk, and was straining and voiding a great deal of bloody lymph and mucus.

Present symptoms.—The straining and voiding of blood and bloody lymph, &c., continues, but not in such large quantities. She is warm all over, and does not look very ill. Pulse eighty or ninety, and tolerably full. On introducing my arm up the rectum, I found it very hot, and containing a great deal of similar matter to that voided. The gut also felt thickened and slimy.

Treatment.—A pound of sulphate of soda had been given in the morning. I now took from her about five quarts of blood, but which did not come from her quickly, and it was rather of a blackish hue. The loss of blood nearly caused syncope. I gave pulv. opii ʒj, ol. lini. Oss, and ordered half a pint more oil to be given at night, and ʒj opii and Oss. of oil the first thing on the next morning; gruel was also given by the mouth and in clysters.

2d day, 9 A.M.—The straining has in a great measure ceased, but the blood, &c. comes from her as badly as yesterday. No fæces have passed. The ears and horns are cold, and she is weak. Pulse 100, and feeble. She seems in pain, as she slightly moves her head a little round. She lies down most of the time, and is tolerably still. Ordered ʒvjss of spt. æth. nit. in three doses, one to be given every two hours, if she is cold. I blistered the abdomen.

6 P.M.—She certainly is worse. The medicine has been given. The horns are quite warm, but the ears are not. She is weaker—the pulse 120, and feeble. No dung has been voided yet. Continues to discharge a little blood and lymph as before. On passing my hand up her rectum, I found it contained a similar discharge, but

now mixed with a considerable quantity of serum, and is very offensive. The respiration is increased. I gave hyd. chlor. 3j, pulv. opii 3ss, ol. lini Oss in a little gruel. I rubbed on some more blister, as the other had not taken any effect; I also ordered the same medicine as the last to be given shortly, a powder the same as last, ʒxij ol. ricin., and some solut. of chloride of soda every hour in clysters and by the mouth. I fear the result.

3d day, 6 A.M.—The ol. ricin. ordered last night has not been given; but early this morning, as no fæces had yet passed, Oiss of it was given. Pulse not above 80—respiration more calm—the straining has entirely ceased—she frequently grunts. On examining her rectum, I found it did not contain the blood and lymph as before, but some that was of the slimy nature that is seen sometimes around the dung of horses: upon the whole, I think she is better, but she is very weak.

12 M.—She continues to grunt much, and lies down a great deal. Give 3ss opii and 3j of hyd. chlor. *5 P.M.*—Much weaker, and worse, and is evidently sinking. Bowels not open. Give 3vj pulv. zingib., ʒiij pulv. gentian, and a small cupful of brandy.

4th day.—She died about 6 in the morning.

Examination.—As she lay in the cowhouse, a portion of the rectum had prolapsed, and it looked like a secretion of dark venous blood. On cutting open the abdomen, the bowels had every appearance of being in a healthy state; but on opening the intestines they (especially the large ones) were streaked lengthways with blackish lines, and the mucous coat was thickened a little: they had not, however, except here and there on the large ones, that vascular appearance which is sometimes found. The rectum was no more diseased than any other part, except a portion that was prolapsed, the dark colour of which, no doubt, was produced by its being grasped by the sphincter and exposed to the air.

I could not find any extravasation of blood in the intestines, and not much of that stringy sort of lymph or secretion alluded to. What was in them was of a liquid nature, and like gruel. The first and second stomachs were not above half filled with matter, almost fluid. The third stomach was completely distended, and highly constipated, except a little about its openings. Between its leaves the contents were quite dry and hard. Many of the plaits were dark and inflamed. The fourth was sound. All other parts healthy.

Remarks.—The night previous to her illness was very wet, and the next morning she was off her milk, and trembled a great deal, and soon after the salts were given her. Now, whether the change of weather or the food was the cause, I cannot say: most likely the two were conjoined. I do not now think that the bowels were

excessively diseased at the first, as the quantity of blood and lymph discharged was not very great, nor the straining very frequent, nor did the latter continue of much consequence for above a day or two after I first saw her; but I think it highly probable that staking existed at its commencement. Had I known of the existence of the state of the third stomach, I do not think that I should have taken so much blood from her; but thinking the bowels the primary disease, I was induced to do so; indeed, it might have been the case, and the bleeding may have had a decidedly good effect on the bowels. I do not think it generally advisable, when they are merely staked in the third stomach; and I much doubt whether it is prudent to carry the depletory system too far even in the bloody flux of the bowels. I do not think that any medicine would have opened the stomach; but had not the disease of the bowels existed, I should have given more stimulants.

A CASE OF FRACTURE OF THE UPPER JAW.

By Mr. W. C. LORD, V.S., Parson's Town, Ireland.

I HAVE just dismissed from my infirmary a beautiful race-mare, well known in this country as the property of J. Salor, Esq., Gurteen.

She got her leg entangled in the collar, and her struggles to disengage herself were so violent that she fell, and her front teeth came against the manger with such force that it fractured the anterior from the posterior maxilla, driving the former three inches within the inferior; so that when first I saw her she looked like a bull-dog, having the lower teeth projecting over the upper.

The first word the groom said was, "The mare's teeth are driven down her throat, Sir;" which I thought was rather an unfavourable position to have them in. However, to make a long story short, I cast her, and had very great difficulty in reducing the fracture, as five or six hours had elapsed since it occurred, and there was considerable inflammation in the gums: but by patience and perseverance I succeeded. Placing my two fore fingers inside the teeth and my thumbs on the gums over the fracture, I pulled steadily, but without very great force, for about twenty minutes, when I got it into its right position. I then took a large pledget of tow, placed it inside, and secured it with tape, and bound up both jaws so as to prevent the slightest mastication.

My patient got nothing to eat or drink for twenty-four hours, at the end of which time I put the pipe of the syringe into the side of her mouth and injected a large quantity of thick gruel down her throat. I fed her in the same way for a week or ten days, when I was able to remove all bandages, and in three weeks from the day she entered my infirmary she was able to leave it perfectly recovered. She is now in training again, and will henceforth tread the turf under the name of *Fracture*.

ON CHRONIC MENINGITIS IN THE DOG.

By M. U. LEBLANC, Méd. Vét. Paris.

A DOG of small size, with smooth brown hair, of race not quite determined, aged three years, and belonging to M. Duo, was very subject to those epileptic fits that are so frequent among dogs. After a considerable period the fits would cease, and the animal recover the appearance of perfect health; but the more he advanced in age the more frequent were the fits, which is contrary to that which usually happens.

I have often seen these fits cease with the complete evolution of the adult teeth.

The last fit was a very strong one, and was followed by peculiar symptoms. The animal became dispirited—the eyes lost their usual lively appearance, and the eyelids were often closed. The dog was very drowsy; and, during sleep, there were observed, from time to time, spasmodic movements, principally of the muscles of the head and chest. He always lay down on the left side. When he walked he had a marked propensity to turn to the left*. The animal was placed under my care.

I employed purgatives, a seton in the back part of the neck, and the application of the cautery to the left side of the forehead; but nothing would stop the progress of the disease, and the dog died in the course of two months after the last epileptic fit.

During his abode in my establishment he had the run of the garden when it was fine weather. From the drowsiness that he had when he was shut up, he almost always recovered himself when he had his liberty, and especially while his strength remained. He was constantly in motion, and perpetually walking up and down from right to left. This terminated by falling from mere weariness; but he presently rose again and recommenced

* It is a thing very worthy of remark, that in several similar circumstances I have almost always seen the dog turn to the left side.

his travels, and always with a quick pace. Latterly he began to take a circular course, instead of following that of the walks, which were rectangular. He then traversed the squares, totally regardless of, or not seeing, the obstacles that were in his way. When he was stopped by some obstacle, he at first endeavoured to make it give way; but if it resisted his efforts in a circular direction he turned aside, but always towards the left. The nearer he approached his end the smaller were the circles that he took; and, in the latter period of his existence, he did little more than turn, as he would on a pivot. When the time arrived that he could walk no more he used to lay himself down on his left side, or, if we put him on the right side, he turned his head always to the left.

During the whole of the case I did not observe any very evident sign of palsy. For a considerable period he had eaten with appetite; but, nevertheless, he grew thin from day to day, although he was too well fed by the owners, who continually crammed him with food, notwithstanding my efforts to prevent it.

At the post-mortem examination I found a remarkable thickness of the meninges on almost the whole of the left lobe of the brain.

The dura-mater, the two leaves of the arachnoid membrane, and the pia-mater, did not constitute more than one membrane of the usual thickness, and presented a somewhat yellow colouring. The cerebral substance of the left lobe appeared to be a little firmer than that of the right lobe. The scissures of the cerebral circumvolutions were here much less deep than those of the other side. The red vessels which ran in the scissures were of smaller size, and, in some places, could scarcely be discovered.

I will conclude this article by mentioning, very briefly, a fact which has some analogy to the former, but has for its object a dog that has been completely cured.

Madame C—, Rue Faubourg Poissonnière, 20, had a small dog, five months old, that had already been attacked several times with epilepsy, and now became subject to the almost continual presence of it, and had already a propensity to the left: his head retained a degree of heat when the fits had passed. I was glad to see this symptom disappear, which had given me the most uneasiness, because it is usually a very serious one, and generally announces a permanent lesion. I contented myself by prescribing manna in the drink, and ice on the head. Madame C— had sufficient determination to pass two days and two nights with the poor animal, and to continually keep the ice on his head. The dog was living four years after the last fit.

COMPTE-RENDU OF THE PROCEEDINGS OF THE ROYAL
VETERINARY SCHOOL AT ALFORT, DURING THE
SCHOLASTIC YEAR 1841-2.

CLINICAL CHAIR.

Professor.....M. RENAULT, *Director*.

Assistant Professor..M. BOULEY.

Chef de Service.....M. PRUDHOMME.

DURING the scholastic year that has just run its course, there have been brought into the hospitals of the school eleven hundred and eighty-two diseased animals. Of this number nine hundred and thirty were horses, thirty-five belonged to the different classes of ruminants, and two hundred and twenty-eight were dogs. Almost four thousand patients have also been brought to the school for consultation.

The pupils of the fourth year have, as in preceding years, exercised themselves in out-of-door practice, among a great number of persons in the neighbourhood, who have claimed the assistance of the school. The number of animals thus treated have considerably increased during the year.

Thus, then, the care and advice of the Professor, the Chief of the Service, and of the pupils of the clinical department have been in constant requisition, either in the hospitals of the school, or at the morning consultations, or out-of-doors, with respect to more than six thousand animals, a number almost double that of former years, and which, being added to those of last year, amount to the great number of nine thousand, five hundred, and forty-four animals of different species on which the pupils who are seeking their diplomas have been enabled to practise.

It is to be regretted that among this number there was a very small proportion of ruminating animals; but we should remember that the practice recently adopted by the Minister of Agriculture of permitting animals of the bovine and ovine species to enter gratuitously into the hospitals, has not yet been sufficiently adopted. It will not, however, be long ere this measure will be completely brought into practice.

We shall now endeavour to describe the most interesting results at which we have arrived, whether by clinical observation or direct experiment.

Acute glanders.—Glanders has always the privilege of occupying a considerable place in the columns of our compte-rendu. It

is when this dreadful malady effects such extensive ravages, and with such uninterrupted continuance, on the animals of the equine species which surround us, that every day new cases present themselves to our observation ; and although the subject seems to be nearly exhausted, and every thing appears to have been said on this malady that has so long occupied our attention, nevertheless, it is evidently important briefly to relate the result of our observations on this disease during the course of the last year.

The number of animals affected with glanders that have been presented to our observation during the last year has been so considerable, that it may be said that glanders has reigned, and reigns still, in an enzootic state, in all the environs of Paris. It has principally appeared among horses employed in the fortifications, who have severely suffered. The form under which it has oftenest shewn itself is an acute one. Without denying that contagion has contributed to the development of the affection, we do not think that that was the principal cause of this extensive malady. We are rather inclined to think that it ought to be attributed to the severe and debilitating labour to which they are necessarily exposed. This fact will surprise no one, when it is recollected that, in a great number of working carts, the horses are employed eighteen hours out of the twenty-four on a rough road, and badly fed. That which renders this form of it most frequent is, that the horses that are the most subject to it are those which exert the greatest muscular strength ; namely, those who, according to the confession of the owners themselves, are the best and the most willing in harness.

This fact will occupy an important place in the general history of glanders, where many similar cases have already been reported, under the influence of certain observations which actually exist in medicine. There is too great a tendency to make contagion play a seemingly exclusive part in the propagation of glanders.

With respect to the contagion of acute glanders, we must refer to a circumstance that clinical observation and experiment have rendered very important. Acute glanders has not appeared to us to possess so extensive a contagious property as it did in 1840. When in 1840, at the same period of the year, we gave a singular account of the discoveries that we had made on this malady, we affirmed, after our experiments, that it readily transmitted itself from horse to horse by cohabitation. This year our direct experiments have not afforded such frequent and certain results ; and we have seen numerous sets of horses affected with acute glanders, cohabiting for a long period with sound horses, that have not ultimately been in the slightest degree affected.

This fact belongs to the general history of contagious mala-

dies, that do not always possess, to the same degree, as is well known, the property of transmitting themselves.

That which adds to the truth of this observation is, that we have not seen in the interior of any establishment those frightful cases of transmission of glanders to the human being which, during two years, had so sadly terrified us. Finally, in the hospitals of Paris the cases of glanders in man, according to the accounts of the medical journals, have been less frequent than in former years, Although the attention of medical men has been more anxiously than ever directed to this point.

There is another circumstance that attracted our attention this year, and which corresponds with those just quoted. Acute glanders has evidently exercised on the economy of the animals that it attacked a less rapidly destructive influence than during the preceding years. During two years, those that were infected usually sunk under the disease, and died between the ninth or twentieth day. This year we have seen a great number of horses on which the eruption of acute glanders was only accompanied for several days by a febrile affection, which, rapidly subsiding, permitted the full return of the digestive functions and of all the other apparent indications of health, without, however, the real symptoms of glanders disappearing. This explains the circumstance that, notwithstanding the attack of so dreadful a disease, a very great number of horses that exhibited it were employed in different ways in the timber-yards of the fortifications, where the police sanatory laws were not observed.

A concluding fact corroborates the account that we have just given of the comparative benignity of acute glanders in the course of the last year. We have witnessed in our hospitals the *spontaneous* cure of five horses affected with acute glanders perfectly characterized.

A disease which exercises so great an influence on the public health, merits all our attention and all our study; so, with the view of throwing some light on its history, we have continued the series of experiments begun two years ago. We have endeavoured, by a succession of inoculations, to determine whether acute glanders loses its contagious property by reproduction; and we have seen that, even in the seventh generation, the virulence was as active in its effects as when it proceeded from glanders spontaneously developed.

We have tried whether the matter flowing from the nostril, and dried in the open air, long preserved its virulent properties; and we have seen, at the end of six weeks, the scabs proceeding from this desiccation dissolved in distilled water, and acute farcy produced by the operation.

We have tried whether the virulent matter existed elsewhere, as well as in the product of the nasal secretion ; and we have seen inoculation performed with the fluids abstracted from the abscesses in the lungs very rapidly produce acute glanders.

Blood possesses the same virulent properties. Injected into the vessels of a sound horse immediately after its extraction from the vein, it produces at the end of three or four days the eruption of glanders.

In order to assure ourselves still more whether glanders could be transmitted to animals different from the horse species, we have attempted inoculation with the virus of glanders on four cows, three sheep, six dogs, and six rabbits. All the inoculations made on the horse produced, without exception, their accustomed effect, and all our attempts have been completely fruitless on the rest of these animals.

It has been the same with trials of cohabitation, during more than six months, between horses attacked with acute glanders and animals of different kinds.

Chronic Glanders.—In this year, as in all the preceding ones, we have been forced to confess the complete impotency of the efforts that we had made to cure chronic glanders. This result will astonish none of those who know the irreparable lesions that lay in the foundation of this malady. When we have assisted in the post-mortem examination of horses really attacked with chronic glanders ; when they have seen the destruction, so profound, of the membrane which lines the interior of the nostrils ; the collection of purulent matter in the cavities, almost without the issue of any from the sinus ; the transformation, so complete, of the membrane which naturally clothes the walls of these cavities ; when we have examined the lungs of a horse affected with glanders, and have occasionally seen tubercles filled with perforations, sometimes deeply modified in their substance, and on the point of being converted, in large spaces, into a whitish substance, compact, and impermeable to the air ; when we have seen, in the lymphatic apparatus those alterations at once so decided, and also of the lymph, and of the organs which prepare it and transport it, we are not astonished that a disease, of which the influence is so general on the whole economy, and which destroys organs so essential to the integrity of the organic movements, should be entirely beyond the efforts of art.

We have not indeed seen, in the course of this year, the public credulity affected to any extraordinary degree to witness those new attempts to cure glanders, undertaken by men who, abusing high patronage, have dared publicly to announce certain results from means which they themselves know to be completely ineffi-

cacious. Such speculations ought to be publicly repudiated. The public know very well that it is not in therapeutics that the means of curing glanders are found, and that they will only be able to arrest the ravages of this disease when the laws of health are comprehended and practised by all; when our ameliorated breeds of horses are better adapted to the services that are required of them; and when we proportion the labours of the horse to the strength of his constitution.

INSTRUMENTS USED IN EMBRYOTOMY.

By Mr. A. S. COPEMAN, V.S., Walpole.

MR. W. A. Cartwright, of Whitchurch, in the August number of *THE VETERINARIAN* in the last year, requested information upon that very important subject, "Parturition;" and as nothing has since appeared in your valuable journal, at least in the form of a communication devoted entirely to this subject, I am induced to send the enclosed diagrams, and a desultory description of them. They represent a few instruments which I make use of in the operation of Embryotomy, &c. Their simplicity and general efficiency, when in the hands of a scientific and practical operator, can only be known by giving them a fair trial.

Fig. 1.

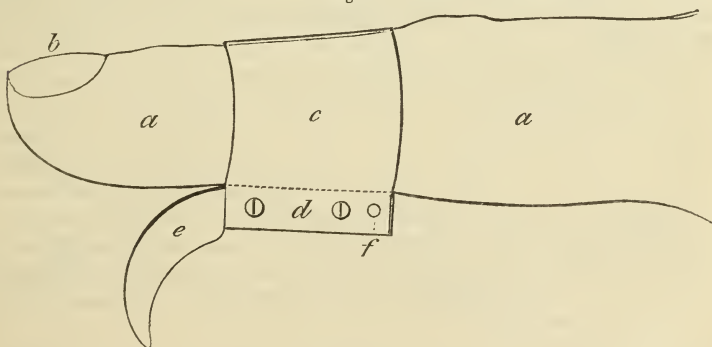


Fig. 1 represents the middle finger with the instrument as in use between the first and second joints; (*aa*) the finger, (*b*) the finger-nail, (*c*) a circular metallic ring or band, like a tailor's thimble, except not being an entire ring, having a projecture of each side at the part to be placed inside the finger (see *d*), into which the blade (*e*) is fixed by two small screws, so that blades or hooks of any form can be used; (*f*) is a hole for a safety-string to be tied round the finger or wrist.

Observe, that the ring or circular band should fit the operator's

finger rather tight, and be nearly as long as the second bone, so that the end of the finger, when flexed, will guard the back and point of the blade, which, with the other fingers on each side, it is almost impossible to wound the uterus of the animal or the hand of the operator; yet the skin, muscles, or even the small bones, of the foetus can be cut or divided in any direction with but little difficulty.

Fig. 2.

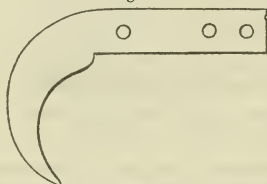


Fig. 3.

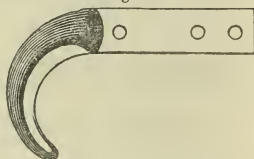


Fig. 2, an unattached blade.

Fig. 3, a small hook, which can be fixed on the finger instead of the blade. This hook will often be found a powerful assistant in the extraction of lambs, pigs, and, occasionally, pups: the part shaded in the diagram is broad and round; the part not is flat.

Observation.—I have several times inserted this hook into the orbit of the eye, and used force sufficient to fracture the bones of the face; yet the young animal has survived, by proper attention, and, after a few weeks, scarcely a trace of the injury was perceptible.

Fig. 4.

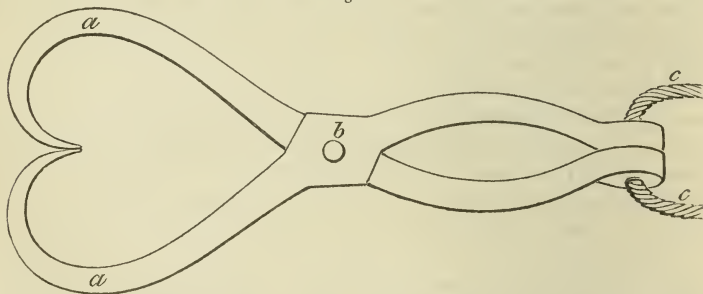


Fig. 4 represents a pair of double hooks, which I likewise use in Embryotomy; (*aa*) the hooks, (*b*) the rivet, (*cc*) a stout cord passing through holes in each handle end. The two ends of this cord are held and drawn by an assistant, when in use, by which it will be seen the more force applied the more secure will be their hold, provided they do not tear out; and if they should, there is no danger of wounding the animal or operator, as the points of the hooks guard each other.

Having spun out my description of Fig. 1st, 2d, and 3d, I will not trouble you with any further remarks on the 4th, at present.

THE SWALLOWING OF A GREEN MAPLE STICK IN THE ADMINISTRATION OF A DOSE OF PHYSIC.

By Mr. J. TOMBS, V.S., Pershore.

I WAS requested in haste, on Dec. 2, 1842, to see a cart-horse labouring under very equivocal symptoms, resembling gripes. Three days prior to my seeing him, he had given to him seven drachms of aloes, for a humour in the hind leg. It was given with a green maple stick, which was rather brittle. He bit the end of the stick off with his grinders, and champed and swallowed it with the ball. The medicine did not purge.

On inquiry I ascertained that he eats and drinks very little—he has lain down a great deal, and occasionally rolled and looked back to the epigastric region—he crouches his back up—contracts his abdomen—stretches out his head on the ground, and gapes similar to a horse that is nauseated. Pulse is a little too frequent. These symptoms, in my opinion, indicated mischief in the stomach. I bled him, and ordered a strong dose of oleum ricini, with a double view:—first, to increase the secretion of gastric juice, thinking that would have a tendency to dissolve the stick; and, secondly, to increase the peristaltic motion of the intestines, which would force the stick onwards, if not wholly digested. I ordered slop-food to be given, and carefully examined the fauces and found them uninjured.

3d.—He is not in any pain: the pulse is natural, and the bowels regular. Give slops.

From the 4th to the 8th he gradually improved. He is now quite well. There has not been any of the stick voided with the fæces, although they have been minutely examined from time to time, therefore it has probably been digested.

A SUSPICIOUS CASE OF POISONING.

By the same.

Nov. 18th, 1842.—My advice was requested respecting a young cart-mare that had been ill three days, and treated by a farrier for a cold. He had given her ʒij of aloes, combined with a cor-

dial ball, and bled her. I was informed that, when she was walked out, she lost the use of her limbs, and fell down.

The principal symptoms:—Great drowsiness—partial contraction of the pupils when exposed to the external atmosphere—pulse 60—slight perspiration. The nasal membrane very much reddened—frequently lying down and rolling, then getting up and eating a little—looks back at the loins, and swerves about as though she would fall down, there being a cerebral affection as well as a stomach one.

I abstracted a gallon of blood from the temporal artery; and, although the bowels are relaxed, I ordered an aperient and enemata, inserting a seton in the breast and blistering the poll.

19th.—Pulse 50: she eats a little—does not swerve so much—bowels relaxed: give febrifuges.

20th.—Considerably worse—pulse 70. She is continually walking round the stable, laying hold of the hay with the greatest avidity, then instantaneously dropping it from her mouth again and gnashing her teeth—the tongue furred. Sometimes she lies down at her full length, groaning—there are frequent liquid evacuations, more than would be caused by *ziv* of aloes: the colon is distended with flatus. These symptoms confirmed my opinion that it was not a complaint of common occurrence.

She was too weak for me to repeat the abstraction of blood; I therefore gave her opium and chalk; I had likewise recourse to enemata, and fomentations to the abdomen.

In the evening she appeared to want to stale. I examined the bladder, and found that viscus empty: the gruel, fomentations, and enemata, were ordered to be continued. At midnight the attendant left her comparatively easy, and very much better, as he supposed; but between that time and the dawn of day she broke through the stable door and walked down the yard and fell into the river and was drowned.

This was an unfortunate winding up of the affair, and, it being an interesting case, I wished a natural termination of it. I instituted a very scrutinizing post-mortem examination, and found every part of the body perfectly healthy, with the exception of two very important organs—namely, the brain and stomach. The villous coat of the latter was very much discoloured in the centre, but not corrugated, certainly not from any medicine given by me: the covering membranes of the brain and plexus choroides were distended with black blood. To cause this the animal must have had given her, by design or accident, some deleterious ingredient: what that poisonous agent was must remain a mystery, as the owner did not wish to implicate any one; therefore I did not proceed to an analysis of the stomach and its contents.

THE VETERINARIAN, FEBRUARY 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

REVIEW OF MR. PERCIVALL'S HIPPOPATHOLOGY,
Vol. III, Part I.

THAT in a field of such vast extent as that of veterinary medicine—a field in which the labourers have been so few and the soil hitherto so unproductive—in which, as general cultivators, we have so few names to quote, and in which even attention to isolated facts has but very lately been properly paid and faithfully recorded—in which a man, in order to obtain a result sufficiently satisfactory to enable him to sit down satisfied that his labours have not been in vain, must have devoted his life, not to scientific gleanings and the culling of theories and hypotheses left scattered around by those who have preceded him, for these, alas! are so few and far between, that a comparatively very short period will suffice for the winnowing the wheat from the chaff, and leaving a sadly disproportionate heap of the latter, but to the daily and hourly drudgery by which alone experience can be purchased—by not merely noticing the facts that accumulate around him, but by endeavouring, at the expense of midnight labour, after the toils and fatigues of the day, to analyze and, as far as possible, to reduce these facts to their principles—to arrange—to classify—and, still more difficult task, to coolly and unprejudicially reason upon and from them, and by these means create a source (how truly invaluable) whence he may pour forth information to his less enlightened, less laborious, and more easily satisfied compeers: how noble a course is this! But, when he has done all this, will the result be such as to enable him to enjoy his well-earned *otium cum dignitate* with pleasure and satisfaction?—will his professional brethren cheerfully and willingly accord to him the meed of his labours?—will they acknowledge the debt they have incurred and the obligation they are under to him? If the question

is asked of the few—those who can appreciate the work produced, and who are aware of the talent, the labour, and the indefatigable research which alone could have produced it—the answer is, Yes ; but if it be asked of the many, the common-place every-day practitioner — the shallow pretender to superior skill — or the mere empiric, who blunders on with this only result, that every blunder he commits there is one the less to be committed, the answer will be, No. Some of them may indeed, in private, avail themselves of the information opened to them ; but, asked for an opinion in public, hear their report :—the author is a mere theorist—a man well enough fitted, indeed, to write a book, but a nonentity in practice—and, what is still worse, he is a decided plagiarist ; and has not only copied all he could from others, but has positively written nothing that they were not before perfectly aware of : add to this, professional jealousies, personal animosities, and party squabbles,—and well may he exclaim, “ Would that mine enemy would write a book ! ”

During the middle age of veterinary medicine, by which I mean the time extending from the establishment of the Royal Veterinary College to within the last three or four years, but two authors appeared to whom we at all look up to as authorities,—Blaine and White : I am, of course, now speaking only of the authors of general works, for several most valuable monographs were produced, and some clever articles, inserted in the various encyclopædias of the day. Blaine's work is that of a man of talent, containing a mass of valuable information, well arranged and carefully put together. White's is that of a man of genius—careless, irregular, and idle—who scatters about facts and opinions, of the most valuable and important description, with about as reckless and careless a hand as a child might pearls and diamonds—but pearls and diamonds they are nevertheless.

Of the works of the last few years, we take shame for knowing but little ; we have seen but few, and paid less attention to any : and it was only the appearance of such a work as “ Percivall on the Diseases of the Horse ” that could arouse us from the carelessness and apathy with which we have been listlessly looking on.

The man who takes on himself the onerous responsibility of giving an opinion on the works of another, should “nothing extenuate, nor ought set down in malice.” To begin, then, with what too often proves the end—finding fault—we neither like the title of the work, nor, in one particular, the arrangement; no, we do not mean the arrangement, for that is excellent, but the doing of it to invent a term for the purpose. That *Boxiana* is an admirable title for a sporting work, or *Morisoniana* for a quack one, we readily admit; but that a word should be coined approaching in the slightest degree to such a shop-like sound as *Hippopathology*, for so important a work as “*Percivall on the Diseases of the Horse*,” brings us at once at issue. The works of medical authors constitute admirable examples in this respect; for their titles are, generally speaking, as plain and intelligible as those on the most common-place subjects, and it is most desirable that their example should be followed by veterinary writers. It is true we are somewhat fastidious on this point, and may as well, as the opportunity offers, out with a grudge we have always had against the title of our monthly periodical, *THE VETERINARIAN*. Why not at once call it the *Veterinary Medical and Surgical Journal*, or some similar name?—but this by the by. The fault we have to find in the doing of the work, is the giving the details of individual cases occurring to other practitioners, instead of merely collecting the facts and giving the authorities for them.

The more cases an author gives of his own to illustrate his opinions, the better; for in these he has his own observation and intelligence to depend on, and is not likely to be misled in his conclusions; but we all know that the slightest additional shade of colouring, the omission of some apparently unimportant detail, or the partial view taken of some particular symptom or remedy, will so alter the entire features of a case, that the conclusions deduced from it by the narrator must be taken “*cum grano salis*” by him who is before the public.

But enough of this: and it is with pleasure we can give our warmest praise to the first part of the third volume which has just appeared; and this is saying not a little, when it is known that the first portion of it is taken up by a subject of which we

know little or nothing, and what little we do know is most unsatisfactory,—the diseases of the brain and nervous system; and it is in some measure for the straightforward and honest manner in which he has treated it that we accord the author this praise. There are no second-sight pretensions to the perceiving of symptoms which never were perceptible; there are no clap-trap specifics for curing incurable diseases, but the truth is plainly and often feelingly told. Take an illustration of this:—"The treatment of tetanus, I fear, will turn out the least satisfactory part of our account, for it is one of those diseases with whose nature we are but imperfectly acquainted, and over which, in its worst forms, medicine exerts its power in vain: nevertheless, it is our duty to set about our task energetically, and in accordance with the best rules of our art. Our treatment, in whatever it may consist, must have regard to the origin, the kind, the stage, and intensity of the disease, and the age, constitution, and condition of our patient;" but "our prognosis from the beginning must be one of hopelessness: with a few remarkable exceptions, most of which will be found recorded, tetanus and death have proved cause and effect." This is manly, this is honest, and, as far as our own experience goes, it is true; for, without denying that some slight cases of trismus have been cured, we never saw a decided case of tetanus which the patient survived. In noticing the distinction between the symptoms of phrenitis and coma, we think Mr. Percivall has omitted a point of some little consequence: it is this, that in phrenitis the paroxysms are frequent and long continued, with very short intermissions; while in coma the lethargic state is most continuous, the exacerbations being fewer and much shorter; and we would call his attention to a most valuable adjunct, if not a principal part of the treatment of coma, which is, after the purgative has been given, the introducing of some powerful stimulus into the stomach every half hour or hour, until its energies are aroused. We have seen cases in which every dose has been followed by marked though evanescent effects, and the favourable results may be in a great measure attributable to their aid. The compound spirits of ammonia, or what is, perhaps, still better, the water of ammonia moderately diluted, will be found highly efficacious in these cases.

We quite agree with our author, that hemiplegia is a disease of very rare occurrence in the horse; nay, we even go farther, and are satisfied that many of the cases called hemiplegia are merely those of acute rheumatism, affecting the anterior and posterior extremities of the same side of the body at the same time. We recollect an excellent illustration of this:—A young foreign horse, recently purchased in town and brought into the country, was found in the morning leaning against the side of his stall, and, on endeavouring to move him, it was found that his off fore and hind legs were nearly useless. It took half an hour to get him out of the stable into an adjoining box, and then it was done only by the aid of several men supporting him along against the wall. A smart dose of physic put him to rights in eight-and-forty hours; indeed, as soon as the medicine began to operate, relief was obtained; but within a week he had a precisely similar attack on the near side, and with the same result. Acute rheumatism simulates some other diseases equally close, and it is only by its shifting character, and its readily yielding to a dose or two of physic, that it can be recognised.

The details of that very serious disease—paraplegia—are very fully and ably given, and its etiology, with a single exception, accurately traced. This exception, we are rather disposed to believe, is a not unfrequent cause of the complaint. We allude to exostosis of the bodies of the vertebræ, frequently the last, or the last but one, of the dorsal, but more generally the lumbar. We have now on the table before us two very interesting specimens: one is caries of the bodies of the two last dorsal vertebræ, with adventitious deposit of soft calcareous matter, to the extent of the size of an orange, which, during life, merely produced a slight stiffness in the action, until the disease had advanced so far that the animal fell and broke his back, but without the slightest precursory symptoms of any affection of the spinal marrow. In the other is a hard bony deposit between the first and second lumbar vertebræ, about the size and shape of a date, two-thirds being external, and the other third projecting into and lessening the diameter of the spinal canal. This horse was found down, paraplegitic in the field, and, after a week's unsuccessful treatment, was destroyed. Two other cases have also occurred, in

which the diameter of the canal has been lessened, and the spinal marrow, consequently, pressed on by ossific deposit.

On quitting a subject of the anatomy and physiology of which, as well as of the pathology, we know so little as we do of the brain and nerves, it is with positive pleasure that we turn our attention to an organ, the anatomy and physiology of which we are so perfectly *au fait* with as the eye, the dissection and investigation of which is an actual amusement, after the examination of the more dry and less defined structures; but, at the same time, it is a most annoying and humiliating acknowledgment that the veterinary surgeon is obliged to make, that the same impotent result in the treatment of its principal disease still holds good. Nothing can be more full, clear, and masterly, than the account given in the work before us of Ophthalmia, and we therefore do not hesitate to join issue on a few, and but few, points on which we differ. We have no more doubt of the hereditary nature of ophthalmia than we have of any fact that cannot be mathematically demonstrated. The first proofs of this came before us very early in life, and have been followed by others without number. The proofs to which we allude were noticed very many years since on a visit to the breeding establishment of the Hon. Newton Fellows, at that time a very extensive one. He had a magnificent black thorough-bred stallion blind in both eyes, which was so great a favourite, that, at the period alluded to, he bred entirely from him. In a capacious and well arranged straw-yard were from thirty to forty colts and fillies, principally yearlings and two-year-olds, all his stock, and shewing almost every diversity of form and figure;—in two points only did they all agree: they were all black, and every one of them had defective eyes. Three or four were blind; the great majority had diseased eyes; and out of the entire stock not a pair of clear, sound, good-looking eyes could be selected. With respect to the fact alluded to, that stallions with good eyes get stock predisposed to ophthalmia, it must be borne in mind, that the same law applies to this as to all other hereditary diseases, namely, that a portion of, nay even an entire, generation may escape scathless, but that in the second or third it will return with all its virulence. In discussing this question, therefore, it is neces-

sary not only to ascertain the state of the eyes of the sire and dam, but of the great sire and great dam also; when, in more than one case, we opine the above will be found to hold good. This is the main point of difference between our author and ourselves: on the others he shall first speak for himself, and the quotation will give a fair specimen of his style of treating his subject.

“Relapses are looked for as a matter of course. There are instances of horses being fortunate enough to have experienced but one attack, and that not of a destructive character; and, as I have already stated, cases have occurred in which a single attack has deprived the organ of vision: these, however, are both exceptions to the general rule of progress. Ordinarily, the disease, after attacking one eye, relapses in the other, and continues this alternation until the animal is rendered totally blind by its ravages, the work of destruction being, as I observed before, commonly effected, as it were, by instalments. It is not the violence of the disease that we have to dread so much as these vexatious relapses. The eye is enabled, perhaps, with the veterinarian's aid, to ‘weather the storm,’ and come tolerably clear out of the attack; hardly, however, has it regained its usual lustre, and is again beginning to be useful to the animal, than a fresh invasion of the disease involves either it or its fellow in all the danger out of which it has but just escaped, every succeeding relapse leaving the organ in a more deteriorated condition. It may commence in both eyes, and relapse in one; or begin in one, and relapse in both: this last case, however, I believe to be the rarest, and it is surprising how many returns of the disease some horses will experience before the eyes become disorganized; for that alone appears to put an end to relapses. There is a horse at present in my regiment who has had fifteen attacks in his eyes, alternatively, and still, from preserving some vision, is doing his duty. Another has had seven attacks in the same eye; two others have experienced each of them five attacks, and have gone quite blind. It has been said, that, as soon as cataract is completely formed, relapses cease. This, however, is not always the case. The disease will often re-appear, again and again, even after the pupil is completely opaque. In fine, as I said before, nothing short of

the disorganization of the entire globe of the eye appears to put an end to its merciless visitations: so long as any structure is left for it to prey upon, so long may the devouring malady be expected to return."

Now, in the first place, we have seen cases in which, although cataract has supervened, all the other parts of the eye have escaped or recovered from the ravages of the disease so completely, that, were not the cataract actually present, no one could predicate that the organ had been the subject of disease; and, in the second place, we affirm that, in a vast majority of cases, genuine ophthalmia invariably ceases as soon as cataract, either partial or complete, is fully established. We do not deny that the eye may be occasionally inflamed and dull, but we do deny that, with very few exceptions, the specific disease ever reappears after the disorganization of the lens has been effected. We are alluding now to the parts anterior to the lens; with those posterior to it the case is different. On the subject of absorption of cataract, we quite coincide with Mr. Percivall, that in real lenticular cases, whether partial or complete, absorption never takes place; and we only regret that the term—spurious cataract—should have been applied to those fleecy lymph-like deposits that are so frequently removed.

The operation of extraction for cataract was performed many years since by a highly-valued surgical friend. The subject was an aged carriage-horse, blind in both eyes, the property of the late Lord Rolle. The operation perfectly succeeded, the inflammation was moderate, the wounds healed favourably, and the eyes cleared entirely; but, as may be anticipated, the practical result was quite nugatory, for vision was so very imperfect that the animal remained as useless as before. He used a common speculum, made of the necessary size, which we ought now to have by us, but that is doubtful; and an oculist's knife, with which, and the fingers of an assistant, he performed the operation without any difficulty.

In conclusion, we take leave of the author with every feeling of respect. In his work, so far as it has yet progressed, is much new and valuable matter, which, with what is not new but equally valuable, has been most admirably arranged, and the

deductions derived from it most talentedly and carefully considered. He deserves the thanks both of the profession and the public, for producing a work that most assuredly will become a standard one, and equally assuredly will not, for a long time to come, have a chance of being superseded.

CRUELTY TO HORSES.

[We reluctantly give this title to one of the divisions of our periodical in the present month; but we should be unjust to that noble animal the horse, if we did not enter our decided protest against the abominable cruelties that have lately been recorded. Of a certain steeple-chase we will at present say nothing, for we believe that some of the actors regret that they should ever have so sadly committed themselves.

We now refer to some transactions that have recently occurred, disgraceful in the highest degree, and against which every man of good feeling will enter his decided protest. We give them as they are recorded by the Secretary to the Society for the Suppression of Cruelty.]

A MATCH AGAINST TIME.

ON Thursday last, William North, of Monmouth-street, Bath, tavern-keeper, appeared before Mr. William Mount, chairman, and other magistrates, at the justice-room, Newbury, to answer the complaint of Mr. Henry Thomas, the secretary of the Royal Society for the Prevention of Cruelty to Animals, who charged him with having wantonly and cruelly abused, ill-treated, and tortured a horse, in the parish of Welford, in the county of Berks.

The defendant pleaded "Not Guilty."

Mr. Thomas said, that he appeared on behalf of the Royal Society for the Prevention of Cruelty to Animals, in order to prosecute the defendant for having shamefully ill-treated a horse. The charge arose out of the following circumstances:—the defendant and another person agreed to drive their horses in harness from Bath to Newbury, a distance of 58 miles, in four hours and a half. They started from Bath on Wednesday, the 7th of De-

ember, about nine o'clock in the morning, and the defendant arrived at the Half-Way House, in the parish of Welford, shortly after one o'clock, having driven the poor animal 48 miles in four hours and a quarter. A witness would be called who would be able to prove that the conduct of the defendant, when he passed the turnpike-gate at Welford, was most wantonly cruel. The landlord of the inn, who witnessed the circumstance, would describe the condition of the horse when put into his stable, and that it died within twenty minutes after it arrived, in consequence of having been over-driven.

In the evening the animal was examined by a veterinary surgeon in the presence of the landlord, and he should be able to prove that the immediate cause of death was the violent exertion the poor animal had been compelled to undergo.

When the defendant reached Hungerford, he stopped a minute or two to give the horse some sherry. At this place several persons remarked the condition of the horse, and advised the defendant not to proceed, as it was quite evident that it could not live to reach Newbury. He, however, persisted, and continued his progress towards the Half-way House, when the death of the animal compelled him to give up the match.

Mr. Thomas then called Robert Bemister, who stated that he keeps the turnpike-gate at The Benham, in the parish of Welford ; and that on the 7th of the present month he saw the defendant and another person about one o'clock coming from the direction of Hungerford towards the turnpike-road. The other man was on horseback, and had hold of the reins of another horse, which was harnessed to a light gig, and was dragging it along, while the defendant was walking by the side of the horse, and flogging it most violently.

When they came to the gate, he particularly noticed the condition of the gig horse, which appeared completely exhausted, and hardly able to put one leg before the other. Witness fully expected that, if the defendant had stopped to pay the toll, the horse would have dropped down and died. They passed through the gate, and, as far as the witness could see, the defendant continued to flog the animal most unmercifully. It was ten minutes past one o'clock when they passed witness. The Half-way House is about a quarter of a mile farther on.

Robert Aller, the landlord of the Half-way House, proved that the horse died in his stable within a short time after the defendant arrived, in consequence, in the opinion of the witness, of having been over-driven. This was the opinion of the veterinary surgeon.

The defendant, who treated the matter with the greatest unconcern, did not deny that he had driven the horse the distance in the period of time stated, but said that the death of the horse was not attributable to over-exertion, but because it had been fed shortly before starting, and had been allowed to take some cold water at Marlborough.

The magistrates having consulted together, acquainted the defendant that they were unanimous in convicting him of the offence charged, and that he must pay a penalty of £5..6s..6d., costs included, or, in default of payment, be imprisoned for two months, with hard labour.

The penalty was immediately paid.

[It is much to be regretted that the magistrates have not the power to commit to prison, instead of inflicting a fine; for in such a case as the present the pecuniary penalty is utterly inadequate to the offence: the perpetration, indeed, of such an outrage richly merited imprisonment, with hard labour. The name, however, of the defendant is known; and his own reflections, and the detestation of the community, will be some, although not a sufficient, punishment.]

The next is a shameful account, but the occurrence took place under somewhat different circumstances.

A HORSE RIDDEN TO DEATH.

Carmarthen.—On Wednesday last, William Burnhall, a son of the governor of the county gaol of Carmarthen, appeared before Mr. E. H. Stacy, mayor, and Captain Davies, to answer the complaint of Mr. H. Thomas, the secretary of the Society for the Prevention of Cruelty to Animals, who charged him with having, on the 4th of the present month, at Abergwilly, within the county and borough of Carmarthen, wantonly and cruelly ill-treated and improperly ridden a certain mare, the property of one Margaret Lewis, in consequence of which the said mare died, and whereby the said Margaret Lewis sustained damage to the extent of eight pounds, or thereabout.

Mr. Thomas stated that the charge arose out of the following circumstances:—On the 4th current, a young nobleman was a prisoner at Carmarthen, and, anxious to obtain his discharge on that day, before the arrival of the London mail, the defendant was employed to go to Llandillo, to obtain a certain document that was required. It was necessary that this should be done before the arrival of the London mail, as it was feared that, if

not obtained before that, a detainer might arrive, and the prisoner continue imprisoned.

It would be proved that Burnhall went to the house of Margaret Lewis about twelve o'clock, and hired the mare; at half-past twelve he left Carmarthen, and proceeded to Llandillo, where he was detained somewhere about an hour. Having procured the discharge, he started from Llandillo on his return, and witnesses would be called, who would describe the distressed condition of the animal, and the violent and wanton conduct of the defendant, who continued to urge on the mare until he reached Abergwilly-bridge, where the poor creature was utterly unable to proceed further, and as soon as the defendant had dismounted, dropped down, and shortly afterwards died on the spot.

The hiring having been proved, David Evans deposed that he saw defendant on the mare, going in the direction of Carmarthen. The mare was galloping as fast as she could, and the defendant kept beating her unmercifully with a stick, though she was much distressed, foaming at the mouth, and the tail shaking violently, and at length she dropped.

Charles Hughes said, he resided in the village and parish of Abergwilly, and remembered seeing the defendant on the 4th instant, about twenty yards on the Carmarthen side of Abergwilly Bridge. Witness was coming into Carmarthen, and his attention was attracted by hearing the sound of blows. On turning round, he saw the defendant riding a mare, and beating her with a rod. The mare appeared completely knocked up, and attempted to stop on the bridge, but the defendant beat her, and compelled her to go on. When the mare came abreast of witness, defendant jumped down, for the mare was evidently dropping. She did drop, and die on the road.

John Weare, horse-dealer, stated that the mare did not require whip or spur.

To Llandillo and back to Abergwilly Bridge is about thirty miles.

The mayor said, that he and his brother magistrate considered the charge clearly made out, and their judgment was, that the defendant should pay £7 as the value of the mare, and the costs, and in default of payment, to undergo five weeks imprisonment in the House of Correction. The defendant was also fined a certain sum as costs, for cruelly ill-treating the mare.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from page 548, vol. i, N. S.]

DISEASES OF THE ARTERIES AND VEINS.

THE arteries are liable to few diseases, unless we admit of fever, cold, &c., where, the natural secretions being obstructed, the quantity, or quality of the blood becomes affected, and the arteries suffer in consequence, as blood is their natural stimulus. These complaints, however, will appear better under their respective heads.

There is a disease that sometimes occurs, though not frequently, which is a distention of the aorta near the heart, forming a kind of bag, that in the course of time, on the animal being severely exercised, will burst and occasion instant death.

Horses dying immediately after running is generally in consequence of a rupture of this vessel. It is likewise asserted, that this artery is liable to become ossified in old horses; but these complaints are all of them out of the reach of remedy, or even palliation.

If a rusty lancet is employed in bleeding, or if, after bleeding, the orifice is improperly closed, or the pin left in too long, tumours, without much inflammation, are very apt to form along the course of the vein. These will generally disappear by fomentations of vinegar, in which crude sal ammoniac has been dissolved, in the proportion of a drachm to a pint of camphorated spirits of wine. Soap liniment will also frequently succeed.

If, however, these applications are found of no effect, the actual cautery, or firing may be tried; or a skilful surgeon may lay open the integument over the vein on each side of the tumour, and with a needle tie up the vein altogether. By this it will be obliterated, and the corresponding branches will increase in diameter equal to the bulk of the lost vein. By this management the circulation will not be affected.

DISEASES OF THE LUNGS.

Inflammation of the lungs frequently follows an increased action of the heart; and although it has the appearance of a local disease I imagine it to be the effect of a general predisposition. This opinion is supported by the animal being much more liable to this disease on being removed from a cold to a warm atmosphere than from a warm one to a cold, as is generally supposed.

After a long continuance of rain, succeeded by intense heat, I should imagine a horse more liable to it than at any other time. Another argument in support of its being a general disease is, that, almost invariably, it commences by an increased action in the heart, which in its first attack is a general fever, but in the course of a few hours the lungs become the immediate seat of disease.

The more remote causes are accounted for in the following manner:—In the chapter on general diseases it was observed, that heat was one of the most considerable stimulants employed to act on the accumulating irritability of the system; consequently, on a diminution of this power, as in cold or rainy weather, an increased accumulation of irritability is the result: and this state of the body is very severely acted on by a small degree of stimulus, as before explained. Thus, after long rains or cold weather, the return of the stimulus of heat acts in a very powerful manner, increasing the action throughout the system. A general inflammation is the result, which is first observed by the pulse being tight and cordy, from the coats of the arteries being strongly irritated. The frequency implies the same state in the heart, which is excited to action before the ventricle is filled.

In the horse, this state can last but a few hours, from the very strong muscular power of the heart and arteries which, in this animal, exists in a considerably more extensive proportion than in the human subject. The lungs also lying so immediately contiguous, and supplied so conspicuously with arteries, it soon becomes the chief seat of disease, which is found to be the case on examining the lungs after death. If the animal dies of what farriers term fever, the lungs will be generally found in a state of very great inflammation, and frequently mortified; while the heart will discover conspicuous marks of inflammation on the right side, which supplies the lungs with blood.

The symptoms are, a hot, dry breath, and heaving of the flanks; the animal hangs his head and never lies down, but generally stands with his fore-legs wide to expand and relieve his oppressed chest. The pulse at first will feel tight and quick, but soon becomes very much oppressed.

If relief is not afforded on the first attack, success must not be expected. The moment this disease is discovered five or six quarts of blood should be taken from a very large orifice, and repeated if necessary in ten or twelve hours, as a cure can only be expected from the most powerful remedies. Frequently, after bleeding, the pulse becomes stronger, from the distention being removed.

[To be continued.]



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LECTURES ON HORSES.

By WILLIAM PERCIVALL, *M.R.C.S., Veterinary Surgeon*
First Life Guards.

THE HIND LEGS.

THE three bones below the pastern, properly speaking, belong to the *foot*; a part I shall defer the consideration of until we have completed the present series of lectures "on Form and Action:" in accordance with this plan I now proceed to the hind extremities.

In my description of the fore limbs, I observed that they differed materially from the hind ones in their superstructural divisions, notwithstanding that below the knees and hocks there existed, both in the living and dissected subjects, every identity between their structures: the osseous fabric of the fore limb exhibits, as a whole, a tolerably fair representation of the limb of the living animal; but than the haunches of the living horse and the parts representative thereof in the skeleton nothing can be more unlike. The framework of bones composing the hind quarters* exhibits a bold, rugged, zigzag structure, remarkable only for its irregularities, having here a huge projection, there a large void, with such a disposition of the component pieces as to offer every advantage, consistent with the general conformation, to the muscles that once filled the vacuities, and had their attachments to projections so oddly, yet wisely, shapen and disposed. The hind limbs are the agents of progression: though the fore contribute to the operation, they are no more than auxiliary forces, not

* "Hind quarters," and "quarters" are expressions used here and in other places in the sense of *buttocks*.

absolutely requisite, and only on occasions called into action. This accounts for the especial development of the hind quarters in quadrupeds of speed, or such as are gifted with extraordinary powers of saltation, such as kangaroos. In surveying the points of a race-horse, the practical man on the turf sets great value on such as are big-haunched; knowing well, that, *cæteris paribus*, a horse so made cannot be far behind his competitors in the race.

THE PELVIS is the name given to that irregular quadrangle of bone which, completing the skeleton posteriorly, constitutes the framework or basis of the rump and hips*. It is formed by the counter-position and part union of the two hip or haunch bones, and by the sacrum or rump-bone, which is let in between them, and makes a sort of roofing to the cavity of the pelvis. In an anatomical point of view, the pelvis is a part of considerable importance, from the circumstance of its lodging within its cavity the urinary bladder, and the organs of generation in the female: to us, on the present occasion, it is of importance chiefly on account of its position in regard to obliquity, its shape, and its magnitude, and the consequent facility it affords the femoral bones in their motions, and the leverage it offers to the muscles attached to it. A small or narrow pelvis cramps the viscera within it, leaves insufficient space for the *fœtus in utero*, and produces, exteriorly, what is called "falling-off in the hind quarters"—small rump, and flat and lank haunches.

A large or wide pelvis throws the hips further apart, making the animal "broad-hipped," or, as he is denominated when the hips are unusually prominent, "ragged-hipped;" there being, as would appear in the latter case, some deficiency of muscle. Within limits, breadth across the hips is desirable. Cart-horses can hardly be too broad and big about their hind quarters: not so, however, with horses intended for speed. For it must be remembered, that by the increase of the distance across from one hip to the other, the hip-joints, in which the femoral bones perform their motions, are also removed farther apart, wider from the centre of gravity; the consequences of which are, inability on their part to balance the machine and move it, in progression, with the same effect as when they are nearer together. The broad-hipped horse will "stand over more ground," crosswise, than the narrow-hipped one, and will, on that account, maintain a surer standing; but should he attempt in action to place his feet underneath his body, at all centrically, he will only be able to take short steps in advance, and should he not attempt this, his wide gait must make his burthen the greater. Broad-hipped horses, in their gallop, cannot throw their hind feet

* See the skeleton at page 6, vol. xv.

centrically forward in progression in the way racers are required to do. They will possess stability and strength in action, but their freedom or extent of action will be diminished; neither will they possess the same facility in turning sharp or quick as horses of a different make. One of the broadest-hipped horses I ever knew belonged to an officer of the Guards, and of him great complaints were made about his "rolling and awkward gait behind," and his inability to "turn about and wheel round" with the required promptitude; the consequence was, that he lost his place as a charger, and was sold as a harness-horse. In a general way, horses measure about twenty inches across from hip-bone to hip-bone; though some will run as much in their measure as twenty-two, while others will not exceed nineteen inches. I do not find, as in human beings, any notable difference between the width of the pelvis in the male and female horse.

Although the race-horse may prove disadvantageously broad across his hips, I believe he will never be found either too *lengthy* or too *straight* in his quarters; by which I mean, the length and elevation of an imaginary line carried from either hip to the point of his quarter, or of another carried from the summit of his rump to the root of his dock. Such straight make of quarter implies small degree of declination in the position of the pelvis, the effect of which is extension of the angles between the pelvis and the femoral bones, and correspondent increase of the distances between the pelvis and the stifles in front, and between the pelvis and hocks behind; and thereby augmenting the dimensions of the muscles running between these salient points, and at the same time furnishing them with, under the circumstances, the greatest advantages in their action. Length and straightness in the quarters must, therefore, be regarded as characteristic attributes of the race-horse.

Genuine hackneys, and many good hunters too, possess quarters the reverse of this in form; more, in fact, like that of cart-horses; and, when it is considered that the former are desired for their walking and trotting paces, and the latter in their gallop to carry great weight, we need feel no surprise at this: blood quarters would have given them increased galloping speed, but they could, with the augmented stride, neither have carried the required weight nor maintained the stability and firmness of step requisite for heavy draught, and, therefore, they would not have proved so valuable either upon the road or in the field. On this account the short-quartered horse is often to be preferred to the lengthy one, even for the purposes of hunting; though, of course, should there be found—as nowadays there often is, from our extensive increase of blood—lengthy quarters possessing the requisite strength, they

will in the field surpass all the cocktails*. Still, do the latter retain one advantage over the blood-horse: with their short and strengthly quarters, they commonly inherit powers of leaping, and cleverness in getting over awkward places, for which the long greyhound-like quarter of the racer seems ill adapted. The same remark may likewise be made in respect to the manege: horses with racing-like quarters never perform so cleverly with their haunches as others; they have difficulty in getting their haunches under them, and from extreme elasticity, manifest "weakness" in them, on which account thorough-breds rarely turn out accomplished military chargers. We know that Irish hunters are proverbially good leapers: they are remarkable for their short, high-rumped, any thing but handsome, quarters: withal, however, they perform wonders in jumping, particularly in the hunting field, and this they are enabled to do from great breadth and shortness, combined with muscularity of the hind quarters.

The cart or dray-horse, the cob, the hackney to carry weight, are all valued the more for their large, rotund, plump quarters. Lank or lengthy quarters, such as would be admired in a racer, are, in these horses, detractive from their worth and beauty; as much, in fact, out of character, as round and full quarters would be upon a race-horse. This shews how necessary it is, before we pronounce on the aptitude or inaptitude of these parts, to first determine the breed of the animal, or for what purpose he is intended. The quarters may be good of the kind, and yet of a character unsuitable to the breed or make of the horse, or they may be of a description in keeping with the breed and conformation of the individual, and yet "bad" of their kind. The quarters of the thorough-bred may possess the due length and straightness, but may be wanting in defined boldness of projecture, and be deficient in muscularity, thereby being flat and lank and powerless.

Again, the quarters of the cart-horse may be characteristically short in their various dimensions, but may prove defective in bulk and plumpness. The length of the loins must a good deal influence the make of the hind quarters: shortness and compactness in the one would ill consort, both in appearance and action, with lengthiness and elasticity in the other; and it is not often that we observe any disagreement in this respect.

We meet, every now and then, with horses whom we admire in every respect save that they "fall off" or are "plain" in their quarters. The rump is small and altogether out of proportion to other parts, or it is one of a "drooping" character; or else, from

* Half-bred horses, with short round quarters, from their tails being carried erect, are commonly so called.

disproportionate breadth and squareness, and great prominence of the hips, the quarters assume an ugly "ragged" appearance. These broad and ragged quarters, providing the thighs and hocks are of strong make, in general possess great efficiency in action. Many of our best trotters, such as are known to be capable in this line of feats both of strength and action, will be found to have quarters of this description with extraordinary development of power in their thighs and hocks. A horse can hardly be made worse in these parts than to possess an extended narrow loin, rising in a line, rather concave than otherwise, from a dip in the back to the summit of the rump, with buttocks drooping from this elevation, having flat or hollow surfaces, and yet being lengthy in their dimensions, with a tail set on as low down as it is possible for it to be. Such a horse will be light-carcassed, tucked up in the flanks after work, and, from want of power in his propelling agents, prove incapable of "carrying weight" or "getting through dirt," or of dragging any thing in the shape of a load.

The hind quarters being the agents of propulsion of the machine in action, durst we attempt to consider them apart from the fore limbs, or to institute any comparison between the two, we should certainly rank them in the highest place in our estimation; i. e., for all purposes of work, a horse with "good" hind quarters and "bad" fore quarters ought, undoubtedly, to be preferred to one with the reverse qualifications: he would carry greater weight, draw a heavier load, and probably not so soon tire. But, perhaps, as was observed on a former occasion, the hind limbs would do too much for the fore in action, and the consequence would be—from the fore legs not being able to act in consort with them and to "get out of their way"—falling down, forwards. Another evil might be, a most unpleasant jarring, stilty, falling-down sensation to the rider, amounting, perhaps, to a total unfitness for the saddle, and even incapacitating the horse for any thing but slow work in harness. After all, therefore, however efficient his "good" hind quarters may render him, want of any thing like commensurate "goodness" in his fore ones would render his admirable qualities behind of little avail. In fine, we may and do, for certain purposes, such as light pleasure riding and driving, &c., make good fore-quartered horses very useful, although their hind parts are any thing but what we would desire them to be; but, for the reasons stated, the reverse conformation proves now and then such as to render the animal totally worthless, unless it be, as I said before, to go a foot's pace in a higgler's or market-gardener's cart.

ON TUMOURS ABOUT THE HEAD AND THROAT OF CATTLE.

By Mr. JOHN RELPH, V.S., Sebergham.

OF all the accidental productions met with among cattle, with the exception of wens, a certain kind of indurated tumour, chiefly situated about the head and throat, has abounded most in my practice.

The affection often commences in one of the thyroid glands, which slowly but gradually increases in size, feels firm when grasped, and evinces very little tenderness. Generally, the attendant is alarmed by a snoring or wheezing noise emitted by the animal in respiration, before he is aware of the existence of any tumefaction. This continues to increase, embracing in its progress the adjacent cellular and muscular tissues, and frequently the submaxillary and parotid glands. It becomes firmly attached to the skin, through which an opening is ultimately effected by the pressure of pus from the centre of the tumour.

The swelling often presents an irregular surface, and various centres of maturation exist; but the evacuations only effect a partial and temporary reduction of its bulk, in consequence of the continued extension of the morbid growth and ulcerative process, which often proceed towards the pharynx, rendering respiration and deglutition still more difficult, until at length the animal sinks from atrophy or phthisis pulmonalis.

In the early part of my practice, having been frustrated in my attempts to establish healthy action in these ulcers, and referring to the works that I had on surgery for information, I concluded that they bore some resemblance to cancer in the human being, and determined to attempt extirpation. Subsequently, numerous cases have occurred in which I have successfully carried that determination into effect. I have had some instances of failure, which failure always arose from some portion of the morbid growth having been left.

In the first stage, I have reason to believe that the tumour may be dispersed by the general and topical use of the iodurets. After suppuration I have tried them in vain.

As soon as the nature of the tumour is clearly developed, I generally attempt its removal, and, when most prominent by the side of the larynx, I proceed in the following manner:—Having cast the beast, turned the occiput towards the ground, and bolstered it up with bundles of straw, I proceed to make an incision through it, if the skin is free, parallel with and over and between the trachea and sterno-maxillaris, extending it suf-

ficiently forward into the inter-maxillary spaces. If I find it firmly attached to the apex of the tumour, I then enclose it in a curvilinear incision, and proceed to detach the healthy skin to beyond the verge of the tumour.

Its edges being held back by an assistant, the knife is directed downwards through the subcutaneous parts, and all those that exhibit the slightest change from healthy structure are removed.

By tying any considerable bloodvessel before dividing it, and by using the handle of the scalpel and the fingers* in detaching the portion of the parotid gland towards the ear, the hæmorrhage was always inconsiderable.

The wound is then treated in the ordinary way, except that detergents and even antiseptics are often needed to arouse healthy action, and the addition of some preparation of iodine is often made to the digestive. In directing the constitutional treatment, our chief aim must be to support the animal system with plenty of gruel until rumination is restored.

I need not note that the operation should be performed after the animal has fasted some hours.

As the success of the operation depends on an entire removal of the diseased parts, and as the submaxillary and parotid gland, with important branches of nerves and bloodvessels, are often enveloped therein, we must not hesitate to remove the former nor to divide the latter. It has occasionally happened that a rupture has been made in the œsophagus or pharynx during the operation. In that case, a portion of the gruel with which the animal is drenched escapes for a few days; but I always found that the wound healed by granulation, without any particular attention.

The weight of these tumours varies from a few ounces to some pounds. One that I removed from a two-year-old galloway bullock, weighed six pounds and a quarter. A considerable portion of the skin that covered it was excised and included in the above weight. It comprehended one of the parotid glands; and I had to divide the trunk of the carotid artery and jugular vein.

This affection may be distinguished from parotiditis and other phlegmasiæ by the action of constitutional disturbance, and heat and tenderness, and by the lingering progress it makes. I was once called to a bull labouring under alarming dyspnœa, that had gradually increased. No external enlargement was perceptible; but, on introducing my hand into the mouth, a large

* This may appear to be a barbarous procedure; but, when young in practice, I had to perform œsophagotomy on a heifer for the extraction of a potato, and, speaking of the subject to a late bold and experienced military surgeon, he advised this mode of division in some situations.

polypus was found hanging from the velum palati into the pharynx, greatly obstructing the elevation of the epiglottis and the passage of food. After performing tracheotomy to prevent suffocation, I passed a ligature around its pedicle, in the way suggested by the old anatomist Cheselden.

A section of one of these tumours mostly displays several abscesses, with matter varying in consistency and often very foetid, enclosed in what seems to me to be fibro-cartilaginous cysts, the exterior of which sometimes gradually disappear in the surrounding more vascular abnormal growth. Osseous matter (I judge from the grating of the scalpel upon it) occasionally enters into the composition of these cysts.

I have treated this affection in cattle of the long-horned, short-horned, galloway, and highland breeds, and, from the number of bulls in this class of patients, have reason to conclude that they are more liable to it than the female.

About twelve months ago I examined the head of a cow, on the right facial region of which there existed an enormous tumour, extending from the eye to the lips, and which I mistook during life for a periosteal enlargement. On cutting into it my mistake was evident. There was scarcely a trace of the original bones beneath the mass: even those forming the nasal sinuses on that side were replaced by a formation much resembling the cysts before alluded to, and full of abscesses. The progress of the disease was decisively marked in the inferior rim of the orbital cavity, where the osseous matter was being removed, and the morbid structure deposited.

DISEASE OF THE KIDNEY AND URETER IN A YEARLING CALF.

By Mr. W. A. CARTWRIGHT, Witchchurch.

ON June 10, 1842, I was requested to attend a yearling calf that was a little unwell. There was not any thing to point out precisely the disease, and I therefore gave only a little aperient medicine.

13th.—She is off her feed, and limps a little on her off hind leg, but the exact seat of lameness is obscure. The cow-man, about this time, discovered behind her, when she was lying down, a little coagulated blood. On voiding her urine it came dribbling away, and, at the conclusion, a very small quantity of coagulated blood was expelled. I continued giving aperient medicine for a few days.

16th.—She was more off her feed and lamer, and was very feverish, but she urinated tolerably well. I now took about two quarts of blood from her, which relieved her of the fever, and she fed a little better; but, soon afterwards she began to lose condition and get worse and worse, and her hock and stifle were likewise swollen, and evidently gave her, especially the former, much pain. Fomentations had little effect on her, and, at last, she was unable to get up. During the last week or nine days of her life I gave the balsam of copaiba, and her kidneys acted well, and scarcely any blood came from her, nor did she seem in any pain, except from the leg.

On the 1st July she was killed.

Examination.—She was in fair condition. When hung up and opened, a tumour, half as large again as a person's head, presented itself about the loins, and was firmly attached to the spine, and mostly to the off side. This tumour included the left kidney. It was about fourteen inches long, and must have been, when she was alive, almost in contact with the abdominal muscles. I had the tumour removed and sent home. The bladder was sound, and contained a very small portion of blood at the orifice of the left ureter. The whole tumour had a good deal of adeps about it, on removing which, I found that the left kidney was merely attached to it by fatty matter and cellular tissue. Proceeding from the bladder, the ureter was, for an inch and a half, about the thickness of one's thumb, and wrinkled here and there, after which the large tumour abruptly commenced.

On laying open the ureter from the bladder, I found that it went directly into a large tumour, or mass of coagulated blood, of which I should think there were at least three quarts. The inner membrane of the ureter, proceeding from the bladder, was of a similar colour to the inside of the gall-bladder, and this colour could be traced for some distance on the inside of the tumour on the side of the blood. At the anterior, inferior, internal portion of the tumour there was a kind of sac, made up of concentric layers of, to all appearance, organized lymph, and which could be peeled off from the surrounding callous covering of the tumour. I am not certain whether this may not have been a portion of the buff formed from the effused blood. The cortical portion of the kidney contained a few small abscesses, but the other part and its pelvis were healthy. I neglected to examine the ureter from the kidney to the tumour, but the distance was very short, as the tumour lay not above an inch from the kidney. The hock and stifle joints contained a good deal of pus, and in some places the perichondrium was ulcerated through, giving the spots a red hue.

Observations.—I do not think that this large quantity of blood came from the kidney, but, I fancy that there must have been some disease of the ureter, or, probably, the rupture of an aneurism of some vessel connected with it.

I have seen several other large tumours about these parts in young cattle, evidently implicating or originating in the ureters.

CASES OF PARTURITION AND TRACHEOTOMY.

By Mr. W. H. SPARROW, V.S., New Malton.

ON Monday, April 25, 1842, I was requested to attend a mare, the property of a farmer, seven miles from this place. She had been some hours in labour, and the owner, not succeeding in extracting the foal, after many fruitless efforts, decided upon obtaining professional assistance. I found the mare in great agony from the rude efforts that had been resorted to, and the parts were much swollen. She had ceased her labour throes.

From the swollen state of the parts, it was with much difficulty that I could ascertain the state of the foetus: at length, I found the fore legs presented, and one of the hind ones between them, which made me at first think there were twins. On more minute examination, I found the foetus on its back; yet I could not by any means get at its head; but, from the bent position of the neck, I concluded that the head was lying under it. I tried to force the fore legs back, and draw out the hind one, but all our attempts were fruitless.

The mare being in a very weak state, she had nitric ether $\mathfrak{z}\text{ij}$ given in a small quantity of gruel: in fact, nature was nearly exhausted on my first arrival. She soon afterwards died.

I then proceeded to examine the state of the uterus. The head, the situation of which I most particularly wished to see, I found lying under and across the withers at its posterior part, having formed an indentation, the form of the head being nearly that of a half circle. The left posterior jaw also was two inches longer than the other.

CASE II. *April 30.*—Mr. Priestman, of Hildenly, called to tell me that a cow of his, which had gone its full time, had parted with the cleansing, and had come to its milk, but without producing any calf. He wished me to see her: accordingly I went, and, upon examining the uterus of the cow, found the calf, and with the greatest ease removed it, for it was no larger than a middle sized dog.

CASE III. *June 29.*—A bay mare, four years old, the property of a tradesman in this town, had an attack of œdema of the fore extremities, neck and head, which were frightfully distended. The animal had had strangles. The blacksmith who attended was frightened, and ran out of the stable saying “*She is dead! she is dead!!*”

I was requested to see the mare. I found her in great agony, breathing laborious—the Schneiderian membrane intensely red—and much shifting of position. In order to prevent suffocation, I performed the operation of tracheotomy. Two quarts of blood were taken away, and continual fomentations applied.

30th.—Not so much swelling in the near fore leg—bowels moderately opened: the animal contrives to suck up some good thick gruel, with small doses of fever medicine. The blacksmith saw the mare with the tube in the trachea, and exclaimed, “The man whoever put that in must be mad: what good was it?”

She rapidly improved under the influence of tonic medicines, and, on the 10th of July, was turned out to grass.

A SINGULAR CASE OF ABSCESS IN A HORSE.

By Mr. J. HORSBURGH, V.S., Dalkeith.

A STRONG grey horse, in bad condition, was taken ill on the 19th of October, and, after the ordinary treatment by bleeding, blistering, antimonials, &c., the case terminated in acute founder, for which cold applications to the feet were used, and with considerable benefit.

On my first being summoned, I examined the case, and discovered a considerable protrusion of the anus, with difficulty of voiding the fæces. The latter was effected in very small quantities, and the difficulty of voiding it increased throughout the disease. Clysters were repeatedly administered, but the case did not appear to require any active purgative.

In about fourteen days the pneumonic symptoms had subsided, but he was suffering from founder and refusing his food. I now administered a mild purgative, which operated, but produced no good effect. I lost sight of him until the 12th of November, when I was sent for in haste, the horse, as they thought, being dying. I found him in a great deal of pain. The sphincter ani was much protruded, and the animal was straining violently. With great difficulty, and, hence, with much pain to the animal,

I made an examination per anum, and found a large abscess occupying the lumbar region, extending forward about eighteen inches by eight in breadth, pressing inferiorly on the rectum, so that the open hand was with difficulty passed, and posteriorly on the sphincter ani, causing the protrusion already alluded to. I considered my case to be nearly hopeless.

There was considerable fluctuation within the tumour, which was evidently filled with matter, and if discharged into the cavity of the abdomen, would have been most certainly fatal.

As there was no prominent part externally, an operation was evidently attended with danger; but the case was urgent, and it was necessary that something should be done. At first, I was disposed to effect an opening by the side of the sphincter muscle; but, on re-examining the parts, I found a small protrusion of the tumour within the sphincter at its superior portion, and through which, with little difficulty, I pushed my finger. This was immediately followed by a flow of thin matter of a most offensive smell, mixed with a considerable quantity of thick flocculent pieces. The wound was now a little enlarged, and the tube of a clyster syringe introduced. Immediately a discharge of at least four quarts of the above matter was effected, and the smell was so intolerable, that all my assistants left the stable. The poor animal, however, experienced immediate relief.

The course of treatment afterwards pursued was to evacuate the matter twice a-day by means of a catheter about twenty inches long, which I had made for the purpose, the bore being about half an inch in diameter, through which a great quantity was discharged for awhile, when it became so thick as not to flow. Recourse was now had to the clyster-syringe, by which a little warm water was thrown up, and taken away by the catheter once a-day. A weak solution of sulphate of zinc was afterwards had recourse to. A dose of physic, with some tonics, completed the cure.

I may mention, that a small tumour appeared at the side of the sphincter about ten days after the opening of the abscess. This was punctured, and a quantity of the same matter was discharged. The animal is now in good condition and perfect health.

This is the second case of the kind that I have seen. The other occurred about five years ago. The horse was in bad condition, with occasional symptoms of nephritis for twelve months. His off hind leg swelled, broke out a little above the hock, and discharged the same sort of matter. He was destroyed, and a great quantity of purulent matter found, in which were floating a number of little balls.

ON THE LATE EPIZOOTIC DISEASES AMONG CATTLE, SHEEP, AND SWINE.

By W. YOUATT.

[Continued from p. 88.]

WE pass southward from Northumberland into Cumberland. It is singular that from the whole of this county not a single paper was transmitted to the Central Agricultural Society. We were, however, favoured with a truly excellent one from our valued friend Mr. Carlisle, of Wigton, on the coast of the Irish sea. We regret that we shall be compelled very materially to contract it, but the readers of the Old Series will find full justice done to it in the 14th volume of *THE VETERINARIAN*.

Mr. Carlisle very properly remarks, that epizootic diseases are generated by the existence of some peculiar poison or deleterious gas, by which the atmosphere becomes contaminated; and which coming into contact with the blood in the lungs, or through the medium of the skin, the vital fluid is, to a greater or less degree, empoisoned, and the parts that it supplies are deranged in structure and in function.

The peculiar state of the atmosphere under which the various epidemics occur has never been satisfactorily explained. It is often changed or empoisoned by various miasmata which had escaped from the bowels of the earth, not cognizable by our senses, nor detectable by the best chemist. The change is recognized only by the effects produced on the animal body.

Epidemics assume different forms and characters, depending on the locality, the predisposition of the animal, and some unknown atmospheric poison. Locality has often much to do with the character of the disease: it is an obstacle to remedial measures—it is the cause of some singular train of symptoms—it varies with the soil, pasture, and previous management of the animal. It is both contagious and infectious; it has been communicated to beasts previously sound, by butchers, veterinary surgeons, and the usual attendants on cattle; and it is often propagated by cattle walking on roads where infected animals had previously gone. Its origin, however, is most frequently in the atmosphere, and its properties are far beyond our comprehension. It may be conveyed from one animal to another of the same species, and in such case the disease is usually found to be considerably mitigated. It is generally confined to cloven-footed animals;

but there are well-authenticated facts of the attendants on diseased animals becoming similarly affected.

The symptoms of the disease are very characteristic, and can scarcely be mistaken at the very commencement. The animal is dull—the coat roughened—a great disinclination to move—a considerable flow of saliva, of a ropy consistence, from the mouth—large bladders or vesicles appear on the dorsum of the tongue, and on the membranes of the upper lips and gums, which vesicles soon burst, and leave unhealthy sores or ulcers. The feet become affected with similar eruptions. In some neglected cases the claws slough off, and from irritation and pain the animal becomes seriously emaciated. The udder is often seriously affected; the teats are covered with similar eruptions, and the act of milking produces considerable pain. The pulse is seldom much accelerated, and the respiration is rarely much above the usual standard of health. These symptoms will often continue from four to six days, according to the state of the animal and the mode of treatment adopted. Two or three days previous to the attack the animal will sometimes be heard to cough or hoose.

The treatment should vary according to the symptoms and course of the disease. Some aperient medicine will, generally speaking, be required, but it must not be sufficiently strong to produce dysentery. Sufficient care has not always been paid to this. Twelve cows were, a little while ago, drenched with a solution of nitre instead of Epsom or Glauber's salts, and every one of them perished.

Bleeding will be required when the inflammatory symptoms are urgent; but this should never be carried to any considerable extent, for the character of the disease that supervenes is often of a low typhoid nature. If there are marked indications of symptomatic fever, the greatest attention should be paid to the feet. More depends upon this than is generally imagined.

The best application to the feet, after the diseased parts have been as much as possible removed, is melted tar with an eighth part of pulverized sulphate of copper. In protracted cases, and when the animal is labouring under considerable emaciation and debility, good gruel, with gentian and ginger, will be exceedingly useful. When the udder is much diseased, mercurial ointment, iodine, and camphorated oil, will generally be found very useful.

Mr. Carlisle relates some singular cases of calves, newly dropped, having had confirmed murrain at the time; clearly proving that they must have imbibed the disease from the parent during utero-gestation.

He says that cattle in his part of the country did very badly

after calving in 1841. There was a great tendency to force down the uterus, and it was generally from four to eight days before the placenta came away. In several cases it was necessary to remove it by manual force. It seemed to be, in his opinion and that of his friend Mr. Relph, a species of epidemic, and connected with or left on the animal by a previous epidemic. In not less than fifty patients, on which he was called upon to attend, and all of which had the epidemic, the animals were continually straining, as if they wanted to get rid of some foreign or irritating substance, and continued to void a considerable quantity of putrid matter for a long time. Many that were affected in this way never gave any milk, and others were obliged to go dry from the udder becoming so much affected. The disease was most successfully treated by bleeding and purgatives, with occasional sedatives*.

We will now turn towards Westmoreland; and, first, we have the excellent account of Mr. Sarginson, V.S., of Appleby, on the river Eden. He says the epidemic among cattle, in 1840-41, in the neighbourhood of Appleby, created much causeless fear and anxiety among graziers generally at its commencement. Many of the druggists, within twenty miles of this place, took advantage of the prevailing excitement, and in several of the provincial papers reported the disease as being one of the most dangerous and fatal maladies that had hitherto appeared; but, at the same time, all of them boasted of their own specific. Many persons were thus induced to resort to foolish but innocent measures, both as preventives and cures, whilst others employed the most dangerous and destructive remedies. Mr. Sarginson particularly refers to one case. Twelve three-year-old calving heifers died within two hours after the administration of some unknown medicament which the owner gave to them. Within a short time after they were drenched they all began to be exceedingly ill, as if they were affected with colic. Their sufferings were so extreme, that they were all turned out into a field, where they expired in the abovementioned time.

A messenger came for him that evening, but he could not go until the following morning. When he arrived he examined four or five of them, and found the contents of the stomachs and bowels in a fluid state. The lining membranes of the stomachs had a blanched appearance, were almost dissolved, and scarcely attached to the subjacent one, with patches of inflammation on other parts of the digestive organs.

He satisfied himself that they were all poisoned by the deleterious drugs that were administered.

* THE VETERINARIAN, vol. xiv, p. 332.

He examined the remaining part of the stock, and found sixty-one of them labouring under the symptoms of this malady. He ordered each of them a dose of purgative medicine, enjoining at the same time cleanliness and comfort; and in a few days after they were nearly all well.

This disease appeared under all circumstances. Neither mild, foggy, rainy, windy, nor frosty weather, seemed to exert any influence in either favouring or arresting its progress; nor did it make any distinction of soils or localities, but continued to pursue its course with a steady perseverance until it had inoculated the whole neighbourhood.

It is true that a stock of cattle here and there, and now and then one or two among an infected stock, escaped its attack; but, generally, the cattle on a farm were all seized by it at nearly the same time: then the pigs became diseased, and afterwards the sheep.

He was not prepared to say whether it was or was not contagious; but this much he would affirm, that cattle on farms far away from any possible contagion were attacked by it; and, on the other hand, it happened here and there that a stock of cattle in the midst of the infected ones would escape its seizure.

He did not remember an instance in which it proved fatal when judiciously proper means were used; but when neglected, or unskilfully treated, it in a few cases, and but a few, terminated in death. He attended many cattle after they had been ill with this complaint for some weeks, and then he generally found the constitution strangely involved. There was extreme emaciation; tumours appeared on various parts of the body, some of which became ulcerated, and the poor animals laboured under the highest degree of irritative fever. In this modification of the disease he found that narcotics, tonics, and alteratives, combined or interchanged, formed the most efficient remedies.

At Low Bridge-house, near Kendal, is the residence of Richard Fothergill, Esq., who sent an interesting account of the appearance of the epidemic.

The disease was brought to his neighbourhood by the purchase of cattle at Kendal Fair on the 9th of November, 1840. He bought six two-year-old galloway heifers at that fair, and which were then apparently free from the complaint.

On the 14th the first was taken ill. It had a sore mouth, and was lame. On the 20th four others were ill, and on the 21st the sixth.

On the 23d, and at different times up to the 30th, six galloway and four short-horn cows were ill of the complaint. These ten were in a cow-house one-third of a mile from the others, but *were attended to by the same man.*

On the 19th of December he bought from the same dealer seven other heifers. They were the last of the lot, and had been at Kendal fair, and, not selling, came back to the same land. Between the fair-day and the 19th of December they had the same complaint, and were nearly well.

The first six galloways were out of doors when they were taken. They were in tolerable condition, and two years and a half old. The ten cows and the heifers that became ill from the 23d to the 30th of November were in-doors, and generally in milk. Both the young and the full grown cattle were equally subject to the disease. All suffered, both in the feet and the mouth, and in the feet first. There were no cases, in Mr. Fothergill's immediate neighbourhood, in which any of the animals became affected a second time.

A flock of thirty Cheviot ewes and a tup took the complaint, being in the field in which the six galloways were put when brought from Kendal fair. The shepherd's dog also suffered both in the feet and the mouth. On the other hand, Mr. Fothergill had cattle and sheep on other parts of the farm that were quite well, having taken care to prevent their being on the same land with the infected ones, or tended by the same shepherd. In the whole of the township not a single animal died.

Nothing can be more satisfactory than this account, so far as it goes. The infection was plainly traced to Kendal Fair. In some future accounts we shall be able to follow its progress yet farther.

The quantity of milk was lessened in the cows, even though the udders presented no symptom of disease. In some the milk was quite lost. The milch cows were almost invariably longer in getting well than the young cattle. One cow slipped her calf, apparently in consequence of the disease.

None of the horses on the farm were attacked by any peculiar disease before or during the cattle epidemic.

Mr. R. W. Fisher has also a farm in the neighbourhood of Kendal on which the epidemic made its appearance in the latter part of November. His cattle had not been in communication with any others, but the pasture which they occupied adjoined a public road, along which some infected animals had probably been driven. The heifers were out of doors, and in good condition; but, contrary to what occurred with Mr. Fothergill's cattle, the disease appeared first in the mouth, and afterwards in the feet. As we proceed we shall have several instances of this difference, and may be able in some degree to account for it.

Mr. Foster had about forty head of cattle and fifty sheep. Only four of his cattle—three yearling skye heifers and one old

heifer—were attacked. The precaution adopted by him was to house the infected cattle in a building altogether apart from his other stock, and he employed one man to attend to them, who was not permitted to enter the barn, or any other out-house. Whatever hay or straw might be required was laid in readiness for him to take away; and Mr. Foster was the more particular, as he had some fat cattle almost ready for the butcher, as well as several milch cows. Not the slightest trace of disease appeared on any of them.

In Durham, Mr. C. H. Bainbridge, near Chester-le-Street, gives an account of the epidemic as it appeared on his farm. Out of one hundred head of cattle, eight only were attacked by the epidemic. The disease first appeared in the mouth, and, thirty hours afterwards, in the feet. They had all perfectly recovered in about three weeks. Epsom salts, with the spirit of nitrous ether, was given internally, and the mouth bathed with alum, sulphate of copper, and vinegar.

Mr. Farrow, of Ash, near Durham, could not trace any connexion between the disease and the soil or pasture on which the animals fed, but believed that it was at first confined to the cattle that had frequented the fairs and markets, and was spread both by infection and contagion. Any person or thing coming into contact with a diseased animal rapidly propagated the malady; and, wherever it was accidentally introduced by a diseased animal, it spread with a rapidity scarcely credible. Mr. Farrow relates a singular circumstance in corroboration of this. A farmer purchased a calf in the market, and on his arrival home, in order to place the young animal in a warm and comfortable berth, he took it into the cow-house among his cows. Perceiving, however, that the young animal was unwell, it was quickly removed to another place, where it soon died. On the third day afterwards, the cow that had stood next to the calf became diseased. Three days after this the next exhibited symptoms of illness, and in six days the whole of the dairy was affected. The rest of the cattle on the farm was kept separated from these, and escaped.

A pig in the same yard broke from his confinement, and got to the dunghill, where he ate some pieces of turnip that came from the diseased cattle. On the third day after this he became affected, while not one of the other pigs suffered in the slightest degree.

The symptoms of the disease, as described by Mr. Farrow, are well deserving of observation. The animal seeks the most sheltered situation; the legs are brought as closely together as possible, and the back is considerably elevated. The animal shivers at

the slightest exposure to cold. The feet become affected, or, frequently, the feet and mouth are affected at the same time. There is, at an early period of the disease, considerable itching of the skin, and the animal is continually licking himself.

On the 19th and 20th October, 1840, a cattle-fair was held at Yarm, a market-town on the east of the county. A drove of Irish cattle was brought for sale, but, having evidently the marks of disease among them, they remained unsold. A great number of the cattle that had been at this fair contracted the disease, which, no doubt, they caught from these Irish cattle.

It was not, however, until after the great fair held at Newcastle-upon-Tyne on the 29th October, 1840, that it could be said to present an epidemic appearance. This fair is the largest in the north of England. It is supplied with cattle from the surrounding counties, and great numbers of Scotch cattle are brought for sale. They have to travel great distances, and are exposed to the vicissitudes of the season. The night previous to the fair, they are brought within the suburbs of the town, and mixed with cattle from many different parts. The ground on which the fair is held is an elevated situation, exposed to the N. and N.E. wind. During the day, a considerable quantity of rain fell, and the wind was cold. It was evident that great numbers of cattle had contracted the disease. The unfavourable state of the day, and the fear of the epidemic too evident before the intending purchaser, caused a great quantity of cattle to be unsold. These, on their return home, and also those which had been purchased, very soon had the disease upon them. I should say, that this fair was the grand means by which the disease was propagated to this and the adjoining counties. Whether they contracted the disease by infection, or the wet and cold to which they were exposed rendered them liable to be acted upon by the epidemic influence, Mr. Farrow was unable to say; but it was evident that almost every beast that had been at market sickened in a few days afterward. It was at this time confined entirely to cattle that had been at market; but it soon began to appear along the public roads, and, next, upon farms adjoining those that had infected cattle. It continued to exist during the winter 1841, either more or less, throughout the county, occasionally breaking out on situations where no direct communication could be traced with infected cattle: and, as a fact, it should be stated that where it broke out, without being traced to infection, it was almost invariably on situations high and exposed to the north-east cold winds.

Towards the spring of 1841 it considerably subsided, or gradually died away. No sooner, however, had the movement

among stock taken place, and which usually occurs at this season, than it reappeared. The summer produced few cases, but the number increased as autumn came on; it, however, assumed a very mild character, affecting the animals in a very slight degree. Since that time it has occasionally appeared among the cattle on a farm, without any assignable cause, but generally confining itself to the place. There is at present at a short distance from me a stock of fourteen kyloes affected with it. They were bought in the autumn, and, since that time, had been pasturing upon a high and exposed situation. About a week previously it broke out among them, without any discoverable cause.

During the time that the cattle disease was most prevalent, horses were generally healthy; but last winter, 1842, presented frequent influenza among them. At present, catarrhal affections, with sore throat, is very common, and also strangles among the younger kinds.

In many animals the appetite and general health seemed little affected, and health was restored in the space of a few days; but in others, and particularly in fat cattle and in milch cows in high condition, the appetite was diminished or lost, and the animal suffered considerable pain, with general fever.

Mr. Farrow usually administered a purging drink, but seldom bled, except the symptomatic fever ran high, from the inflamed state of the feet. In such case it usually afforded considerable relief. The heels were also considerably scarified, or well fomented, or placed in a pailful of warm water. Astringent mixtures were afterwards applied to the feet and the mouth.

When the feet and mouth were somewhat relieved, the udder often became diseased, and assumed the character of garget. A little physic and fomentation with warm water, and the application of the solution of the diacetate of lead, frequently removed the inflammation in four-and-twenty hours.

The number of patients on whom Mr. Farrow attended exceeded two hundred, and none of them were lost; but where the farmer treated the disease himself, several cows died. This was attributable to the want of proper management during the disease.

The fat cattle, and the milking cows in high condition, had the disease most severely. Young stock in moderate condition were slightly affected. When, however, the hoofs were lost and the udders suppurated, it was some weeks before the animals regained their proper health.

Mr. Farrow concludes with some very important advice. The epidemic attacks those cattle first that have been at any market

or fair. So convinced were the farmers in general that the disease is principally contracted at these places, that many of them refused to purchase any cattle from the market. In almost every instance the breaking out of the disease among the cattle on a farm could be fairly traced to infection. The animals had either been in contact with strange cattle, or fresh cattle had been brought on the farm. A great number of Irish and Scotch cattle are brought into this county twice in the year,—in the autumn for the straw-yard, and in the spring for grazing purposes. They arrive in large droves, and are sold to a great many farmers in small lots. The disease generally breaks out in these droves, which they are frequently obliged to rest for some time : but those that have escaped, and those that have recently recovered, are taken to the different markets and sold. The purchaser, being quite ignorant as to their having had the disease so recently, takes no precaution, and the consequence is that the infection is propagated to the rest of his stock. These droves have caused the disease to spread more fatally than all other causes put together.

With the following account, by Mr. Cleaver, V.S., at Darlington, we conclude the history of the disease in Durham :—

The epidemic made its appearance in the neighbourhood of Darlington early in August, being introduced by some lean Irish stock bought at Sopcliffe fair. The symptoms were extreme lameness, with discharge from the cleft of the feet round the coronet to the heels, which was troublesome to dress, the animals frequently catching the foot up with convulsive shakings.

The feet were washed clean with warm water, and bathed with salt and water twice a-day, with strict care to keep them clean and dry. The gums skinned away with deep ulcers, and the tongues the same. Some had their muzzles ulcerated, with much constitutional disturbance, as quick pulse, copious discharge from the eyes, costiveness of the bowels, and loss of cud.

The treatment consisted of salts and sulphur in full doses, with one oz. doses of nitre repeated every third day. Three doses were usually sufficient to effect a cure. They lost condition fast, although they had not much flesh at the commencement, but were supported with good gruel and mash. They had a desire for food as soon as their bowels were thoroughly emptied, but their mouths were too sore to permit them to eat. The mouths were washed with a weak solution of sulphate of zinc. After ten or twelve days they began to improve rapidly in condition, but were much longer in getting sound. Sheep and pigs were affected the same way : the sheep had salts given them, and the pigs sulphur mixed

in their food. The milk affected pigs shortly after taking it, and it is believed that it was generally thrown away.

The distemper did not spread much in this neighbourhood until the latter part of October. There is a very large cattle fair held at Yarm on the 19th; and a number of diseased cattle were brought there from the neighbourhood of Leeds and Wakefield. These beasts were bought up in small lots, divided into different flocks, after which the disease spread every day. In the district from twelve to fifteen miles round Darlington, more than two-thirds of the farmers had the disease among their stock. The farmers in this neighbourhood, however, think so little of it now, that, when it shews itself among their stock, they turn the whole of them together, in order, as they say, to get done with it. Some drench them with salts, sulphur, and ginger; others leave them to nature, and these generally ultimately recover, although the disease hangs longer upon those that have no medicine, and they waste most in condition. The symptoms were nearly the same as in the first cases, but milder. There was not generally such dreadful sloughing of the mouth, but they were quite as lame. He did not once let blood, nor lost one patient; but he had heard of many deaths from a complication of disorders, or improper treatment after purging and spicy drinks.

The most interesting cases that came under his care were two valuable cows of the short-horned breed, belonging to an extensive farmer a few miles north of Darlington. The disease shewed itself among his stock of all descriptions in the early part of August. He treated them himself. To some he gave salts, sulphur, and ginger; others were left to nature. All went on well until the middle of September, when a disease broke out amongst his best cows and heifers quite different from any of the others. He sent for a cow-doctor—a chip of the old block; and all that were put under his care died.

After losing four of his best beasts, he sent for Mr. C. to see a cow which this said doctor had given up. He found that she was sinking fast—the pulse scarcely to be felt—the horns cold—the ears drooping—the eyes glassy—the pupils dilated—the nose dry—the head thrown back on the side—the legs and feet cold. This had commenced two days before with violent griping and purging,—the stools mixed with clotted blood and matter. She had no motion during the night previous to his seeing her, and died in the course of the day, and was buried as the rest had been. He regretted much that he had not an opportunity of post-mortem examination.

On the next day two more began to exhibit the appearances

with those that had previously died : the pulse about 80, quick and thready—the horns, one hot and the other cold—the eyes weeping profusely—the nose hot and dry—the hair standing the wrong way—tender on the back, and not able to bear the slightest touch—total loss of milk—gripping and purging—stools frequent, but small in quantity, mixed with clotted blood and matter—constant shifting of the legs when standing, but in no position long together.

He immediately administered a dose of Epsom salts with nitre and emetic tartar. Eight hours afterwards a smaller quantity of the same medicines was given, with plenty of gruel. On the next day the stools had a better colour—less blood and matter were seen : she was not so tender on the back—the skin was more supple—there was a slight dew upon the nose, but no inclination for food. The Epsom salts and nitre were continued, with gentian and caraway powder night and morning in good gruel ; and the spirit of nitrous ether was given in doses of an ounce after the powders. The treatment was continued two days longer, after which the animals perfectly recovered their former health.

He heard of many beasts that had the disease a second time, and had got through it as easily as at the first attack. The milk latterly had been used as formerly. Both when drunk and churned no difference could be detected, except when the udder was sore, and then the milk was mixed with blood and matter.

He had seen only one decided case of epidemic in the horse : the tongue was skinned, and the gums blistered. This readily gave way to aloes sufficient to purge, and small doses of nitre.

Mr. Wheatley of Staindrop, Durham, describes it as having occasionally, yet very rarely, appeared in his neighbourhood. The treatment internally, and attended with almost uniform success, consisted of sulphate of magnesia, sulphur, nitre, and ginger ; the sulphate of copper for the feet, and diluted tincture for the mouth. Swine underwent nearly the same treatment as cattle. There were a few difficult and rather unusual cases among horses.

The illness of cattle having passed away, did not keep them from improvement, but they rather gained flesh faster in consequence of their previous illness. He had not observed a single beast that had been a second time attacked with the same disease.

Mr. Wheatley had seen some instances of the epidemic breaking out among cattle when no communication had been known to occur between them and unhealthy animals. As we proceed, some light may be thrown on this point of our subject. The atmosphere may have some influence in producing the disease, or preparing the cattle for the reception of the poison.

Mr. Wheatley very properly hints at an occasional cause of disease among calves. Barnard Castle is a large cattle market. Many calves are brought in carts from the west moors and dales, and the dealers bestow very little care upon them, as regards food or protection from the weather, during the journey. Mr. Wheatley relates, that he was sent for by a neighbouring farmer to examine some calves. He found them in a most deplorable condition—their age varying from one to two months. Two of them had died on the preceding day, and four others were stretched out and nearly wasted away. The eyelids were swollen and glued together with offensive matter, which flowed in a considerable quantity from each nostril. They all died on the following day. This, perhaps, is not to be considered as any illustration of the epidemic that is the present subject of consideration, but of the ease with which many epidemics may be produced and propagated. The house was filled with an offensive odour, and the remaining four died on the following day.

Mr. Youatt still solicits communications on this important subject. Yorkshire will come next under consideration.

AN ACCOUNT OF THE CURE OF GLANDERS IN THE HUMAN BEING.

A WAGGONER, nineteen years of age, entered the Hôpital de la Charité, in Paris, on the 18th of October, 1841. He complained of having felt ill for the week preceding, without being able to specify any particular seat of disease. Soon afterwards intense pains were felt in the ancle and knee-joints, and the muscles of the leg and thigh, although unattended with swelling or redness. His pulse became quick, the thirst intense, with headach and prostration.

On the 25th of October pustules filled with a purulent matter appeared on the instep and upper surface of the three smaller toes of the left foot. These pustules broke, and cicatrization was completed in a few days; but a diffused swelling now made its appearance in the anterior part of the superior third of the thigh, followed by two similar tumours, one on each leg. M. Mouncret, under whose care the patient was placed, now suspected the nature of the disease, and ascertained that one of the horses kept in the stable where the patient had been sleeping actually had the glanders. For the eight months ensuing tumours of a similar kind to the foregoing were successively and incessantly

appearing on all parts of the upper and lower extremities, although they continued one after another to disperse, and nothing in the general condition of the patient, except his emaciation, gave cause for alarm. One curious collateral circumstance may however be stated. Early in December, 1841, a horse being inoculated with the matter from one of the abscesses, died in the course of five days, without, however, presenting, during life, any of the ordinary symptoms, or after death any of the usual morbid appearances belonging to the disease.

The treatment of the patient was nearly the same throughout, consisting chiefly of the decoction and extract of cinchona in large doses, with wine.

On the 5th of July, 1842, iodine with iodide of potassium was administered. This was followed by an attack of erysipelas in the left arm, and the iodine was suspended, to be resumed on the 17th. No new tumours had appeared during the previous two months, the cicatrisation of those still existing was soon afterwards completed, and the patient was discharged perfectly cured on the 31st of July.

Andral, and other able pathologists who saw this case, were unanimous in pronouncing it a true instance of glanders. The journal from which we have extracted the above relation says, "The case is unique. In all the instances of glanders in the human subject hitherto reported, the disease has proved fatal."

Gazette des Hôpitaux.

COMPTE-RENDU OF THE PROCEEDINGS OF THE VETERINARY SCHOOL AT ALFORT.

[Continued from page 103.]

Diseases of the Chest.—THE antiphlogistic and revulsive treatment has been almost exclusively employed, and generally with success, against acute inflammation of the lungs and of the pleura.

Among the numerous cases of pneumonia that have come under our observation, there are three which, by reason of the singular forms they assumed, deserve particular mention.

In one case the pneumonia, perfectly distinguished from the others at its commencement, both by exterior appearances and by those that are furnished by auscultation, is complicated at this

period of the disease with violent disorders of the animal functions. The patient moved in a forward direction as in vertiginous affections; he then threw himself violently on the ground, and tore his flanks with his teeth. There was evidently violent inflammation of the cerebral organs. The examination after death, however, only presented the lesions of acute pneumonia occupying a portion of both lungs.

The second Case has relation to a horse that was conducted to the school in order to undergo medical treatment for a malady that announced itself with all the most pathognomonic exterior characters of acute pneumonia, such as irregular and rapid movements of the flanks—plaintive respiration—injection of the conjunctiva of a yellowish red—and pulse full and strong. All these symptoms existed; and attentive auscultation discovered a respiratory sound, strong, and to be heard through the whole extent of the thorax. The resonance was strong on each side, and through the whole extent of the parietes. This absence of the symptoms ordinarily so decisive, that furnish the auscultation in acute inflammation of the lungs, invalidates the diagnostic which seems to characterize the whole of the exterior signs, especially as the animal which forms the subject of this account was affected with so much weakness of the posterior limbs, that we almost believed that paraplegia was beginning to commence.

The horse died, and we observed on its dissection that the middle lobe and internal surface of the right lung were the seat of violent inflammation, and had already become gangrenous. In every other part the substance of the lungs was perfectly sound.

Third Case.—A horse, much advanced in age, was brought to the school. He had been ill eight days; and abandoned, at his entrance, by reason of his little worth. He presented every exterior symptomatic appearance that announces acute pneumonia. In this case, also, the auscultation puzzled us, and made us hesitate in our diagnosis.

The pulmonary sound was very plainly heard through the whole extent of the left lung; and, in its normal state, through the whole extent of the right lung.

At the post-mortem examination of this horse, the left lung was perfectly sound, and that of the right lung was so completely and perfectly hepatized from the superior to the anterior lobe to the surface of the diaphragm, that there did not exist more than one permeable vesicle.

This result, wholly unexpected, would have made us doubt the accuracy of our observation, if, on the morning of the death

of the horse, struck with the discordance that existed among the indications which had been furnished, and the general state of the subject, and the apparent integrity of the thoracic organs, we had not entreated several of the pupils to assure themselves, by an attentive auscultation, that there had not been any error on our part.

This singular fact of the perception of the normal respiratory sound on the side of the breast while the lung on that side was completely impermeable, may, perhaps, be explained in the following way.

On the left side, the sound lung, which alone respired, caused a supplementary sound to be heard, which feebly transmitted itself to the right side, across the lung that had become a solid body, and rendered by this transformation a better conductor of sound.

The last two facts come in support of a truth which we have often been compelled to demonstrate in our clinical course. They prove, among other things, that, in the medical treatment of animals, the symptomatic exterior appearance has for its diagnostic the principal value; a value which the more direct explanation of the organs ought to tend to confirm, and very rarely to weaken.

Catarrhal Affections of the respiratory Passages.—In the *compte rendu* of the scholastic year (1839-40) we have announced the fortunate results that we have obtained in the treatment of old catarrhal affections of the chest by the administration of emetic tartar in different doses—from four grains to sixteen, and even to more.

We have continued from that period, but especially during the course of this year, our clinical experiments on the effects of this medicine, and at this period, after three years have passed in experiments almost always fortunate, we believe that we can safely affirm, that the application of emetic tartar is an excellent means in the treatment of chronical discharges, which are not of a specific nature, or, in other terms, which do not depend on the existence of glands.

We consider this to be a very important fact as connected with veterinary therapeutics.

In a work that we are preparing and shall shortly publish, we shall indicate the doses in which tartarized antimony may be administered, the dangers that sometimes attend its use, and the precautions to be taken in order that it may be efficacious, and yet not attended with hurtful consequences.

Intestinal Affections.—The acute inflammatory diseases of the intestinal canal have been in general less serious than usual.

Several, however, were complicated during their course with a comatous affection which long remained after the disappearance of the symptoms of the primitive malady.

Two horses, among others, presented the characters of immobility after an acute inflammation of the intestines.

Colic.—All the results, without exception, of the clinical proceedings of this year, have demonstrated the propriety of the practice of copious bleeding whenever the intestinal pains are intense, and the animals abandon themselves to various disordered movements. This practice, long established in our hospitals, is based on the incontestable fact, that in every case where the intestinal pains announce themselves by violent movements, there is, from one cause or another, congestion in some isolated or extended part of the intestinal tube. In these cases, whatever is the fulness of the intestine, venesection is indicated, and will never be hurtful.

The effect produced is so remarkable that it cannot be made too widely known. We have seen horses in an absolutely furious state during an attack of colic, and whom we were compelled to shackle while bleeding in order to restrain the precipitate movements to which they abandoned themselves, and from which they recovered and became calm and quiet after the abstraction of from twenty to twenty-five pounds of blood.

Intestinal Ulceration in the Horse (Typhoid Fever).—In the course of the month of July, an entire horse, of considerable height, was brought to the Alfort school.

This animal, which, according to the opinion of its owner, had only one fault, that of being too eager in harness, had been employed for a considerable time in drawing stones. He had only recovered three months from an affection of the chest, which had confined him to the stable for fifty days. At his admission into the hospital he was in an extraordinary state of dejection and prostration of strength. He supported himself on his legs with difficulty and pain—his walk was unsteady—the loins stiff and bent—the coat rough, and the countenance had that singular expression of suffering which coincides with the lesions of the ganglial nervous system. The breathing was deep and interrupted, the pulse small and weak, the conjunctival membrane of a red colour, and appearing as if it were infiltrated with a serous fluid; petechial spots were also disseminated over the pituitary membrane.

Auscultation.—The parietes of the thorax did not afford any particular symptom. The diagnosis was uncertain, and the degree in which this malady prevailed it was impossible to determine.

Death was generally prognosticated after the animal had been with us a few days.

The patient, when put into the stable, receded as far as he could from the manger, and refused all food and drink.

During the night he remained lying down for a long time without any moaning or apparent uneasiness, but had considerable discharge of blood from the nostrils.

On the following day he died.

At the post-mortem examination there was very little alteration observable in the thoracic organs.

The opening of the abdominal cavity allowed several remarkable deviations from healthy structure to be observed. The exterior surface of the small intestine reflected a reddish colour through a great part of its extent. An incision being made into the interior, a considerable quantity of chylous matter escaped.

The internal membrane of this intestine was observed to be full of ulcerations almost innumerable. They were of different sizes when examined by the microscope. The greater part were nearly three millimetres in diameter, the largest five, and the smallest one. The latter, like the large ones, had a smooth edge slightly protruding, and might be cut perpendicularly as with a pair of scissors. The smaller and the middle sized were somewhat projecting, or presented in their centre a slight elevation, which was, in fact, a small portion of mucus that had not yet undergone the process of ulceration.

They occupied only a superficial part of the mucous membrane, and merely seemed to be a small portion of the mucous membrane not yet ulcerated, and being in fact nothing more than a simple erosion beneath the epidermis.

The middle-sized ones almost entirely occupied the thickness of the mucous membrane; their base was smooth, and without any unnatural projections.

The largest occupied the whole thickness of the mucous membrane, and their base corresponded with the sub-mucous cellular tissue.

There was no vascular abnormal injection around these diseased cavities. Their border was not surrounded by any red areola, and the mucus was not thicker at this place than at any other.

It was impossible to state positively whether they had their seat in the interior of the mucous follicles. We could see two or three of these follicles well preserved, where the mucous membrane was only a half of its thickness.

Nevertheless, their form, their situation, their rounded and

smooth borders represented, in a great degree, the disposition of the numerous follicles which exist in the mucous membrane generally, and especially in the glands of Peyer. All these ulcerations were formed into groups, in number from three to four, or from seven to eight, and even from nine to twelve.

The mucous membrane of the large intestines, the cæcum, and the floating portion of the colon presented ulcerations similar in their form and disposition, but in a smaller number.

Anasarca.—Cases of anasarca have been very frequent during this year, without doubt on account of the great heat of the summer. Considerable bleedings were employed at the commencement of the disease, and with good result.

Some of these cases will be published.

Thrombus.—The occurrence of thrombus, with complication of inflammation of the jugular vein, has been, as usual, frequent in our hospitals. All, without any exception, have been relieved in a greater or less period of time, according to the intensity of the inflammation, of which the vein was the seat. In some cases, where the vein was extensively ulcerated at the situation of the bleeding, permitting the blood to escape in a large stream at the least movement of the jaws, we have then had much trouble in obtaining the formation and the consolidation of a clot of blood in the superior part of the vein—a condition without which the obliteration could not be effected.

In order to arrive at this result, we have had recourse to the application round the neck of an agglutinative bandage, formed of a mixture of pitch and turpentine. With the aid of this we have been enabled to maintain, firmly applied on the opening of the vein, pledgets rendered more firm by the application of a layer of pitch at their exterior surface; and, by combining this very powerful hemostatic measure with the application of a blister on the course of the vein, and perfect abstinence from solid food, we have been enabled to obtain the formation of a clot of blood, and the development of the inflammation necessary for its organization.

The application of a bandage over the ulcerated vein, which, at first sight, appeared to be a probable means of arresting the hemorrhage in the case of which we have just spoken, ought to be completely rejected.

The ligature which secures the veins usually falls off before the clot of blood is sufficiently consolidated. The air may then be brought into contact with it, and soften it, and the hemorrhage return more formidable than before.

At the termination of an ulceration of the jugular, which

had, during a long time, resisted all the means that we had used, we may, perhaps, mention a singular case of vertiginous disease.

The patient was turned into a stall between two pillars, and, for a month, was condemned to the most complete abstinence from solid food; the least movement of the mouth having uniformly determined a renewal of the hæmorrhage.

He one morning presented symptoms of vertigo. Sometimes he threw himself forward on the straps by which he was retained, at other times he threw himself backward, straining his halter with the greatest violence. The slightest noise produced a more violent effort to break from his confinement. The introduction of the smallest portion of light into the stable suddenly determined a considerable access of the complaint. The pupil was largely dilated, but the breathing calm; the pulse almost normal, and the mucous membrane apparently without injection. He had neither heat nor sensibility on the cranial region.

Similar symptoms have already been observed under the same circumstances, and attributed to inflammation of the arachnoid membrane, consecutive on that of the jugular. In the case of which we now speak, the absence of every sign of general inflammatory action and of all febrile movement does not permit us to admit the existence of an arachnoid inflammation. We rather think that the phenomena that were produced were attributable to a cerebral action, determined by the state of vacuity of the intestinal canal. It is known that, in man, abstinence too prolonged produces singular ecstatic phenomena and hallucination of the senses. The horse was turned again towards its manger, and oats were given him, which he devoured with avidity: fortunately, the clot of blood being sufficiently solid to resist the movement of the jaws. When the digestive action was called into play, the nervous phenomena entirely ceased.

Several cases have been cited of cerebral arachnoiditis, complicated with ulceration of the veins, and which are thus explained:—

Water in the Legs.—Our old authors speak of the danger of the repercussion of the suppuration after the sudden suppression of the secretion of water in the legs. There is a fact on record which comes to the support of this opinion.

A horse, of good constitution in other respects, was conducted to the school to be treated for water in all four legs, and of long continuance. The skin, very deeply afflicted, was covered on the posterior part of the canons with those red grapy granulations which appear in the last degree of the disease.

The secretion which was formed between these granulations

and the integument that covered them was very abundant. Two setons were placed in the thighs of this horse, and a third on the breast, and poultices and emollient lotions were applied to all four limbs. When the suppuration of the setons was established, we endeavoured to recal the integument to its natural state by the application of the actual cautery.

The horse being cast, the grapy excrescences were reduced, on the posterior left leg, to a level with the surface of the skin, and the place where they had grown was cauterized several times with the point of the iron. Being fearful of punishing the patient too much, and thus leading to some serious metastasis by too abrupt a suppression of the secretion of the other three limbs, we postponed the cauterization of them to another time, ordering that linseed meal Goulard lotion should be applied on their surface.

At the end of several days the secretion of the two setons suddenly stopped. The tail, that had been fixed to a loose string on one side in order to prevent it from striking on the orifices of the setons, became the seat of a gangrenous swelling, which propagated itself on the croup. All the phenomena of the general infection soon manifested themselves, and the animal died.

Examination after death brought to view all the lesions of a general gangrene.

RODWAY'S PATENT HORSESHOE.

(SECOND NOTICE.)

OUR first notice of this shoe amounted to little more than an analytical review of the Prospectus through which it was recommended to our attention ; a production we deemed at the time, and now feel no hesitation in pronouncing to be, pregnant with statements laudatory of the shoe incapable of practical demonstration. We argued then, from the nature of the horse's foot and the simple difference there existed between the patented and the common shoes, that it was quite impossible such benefits could accrue as were vaunted in the Prospectus ; and since we have had time and opportunity afforded us for giving the shoe a trial, we have come to the conclusion that, without denying it possesses some advantages, the patented shoe must, sooner or later, be withdrawn from the forge, to be laid where its prototype has for upwards of twenty years enjoyed undisturbed repose,—viz. upon a shelf in the veterinarian's museum, or in the cabinet of some amateur-collector of such like curiosities.

As was stated by us on a former occasion*, Mr. Rodway's patented horse-shoe differs from the shoe in ordinary use only in having a wide and deep excavation, groove, or "concavity," upon its ground-surface—a sort of extension or dilatation of the fullering of the common shoe from the outer to the inner border of the web; and this constitutes the alteration, the effects of which it is our present business to investigate, both in respect to the application of the shoe to the foot, and to the good or harm the horse derives from the wear of it.

By so much weight of iron as it would take to fill up the excavation in Rodway's shoe and convert it into a plain shoe is the former lighter than the latter. In ordinary shoeing—in hackneys, hunters, and light harness-horses—this diminished weight will run about three ounces per shoe, making, in the set of shoes, three-quarters of a pound less in the weight the horse will have to carry upon his feet. No person would think of questioning the advantages accruing to the animal through a long journey, or in speed, from this subtracted load upon his feet. Do we not, in plating race-horses, pursue this principle of subtraction? But every reflecting veterinarian and farrier would feel it his duty to inquire whether this diminution in the weight and substance of the shoe for ordinary use could be made without detracting from its utility, or converting it into an instrument positively injurious. In the instance of the shoe before us we shall, unfortunately for our good servant, the horse, find that we are unable to avail ourselves of its great advantage of lightness, not merely on account of the shoe being by the excavation rendered less durable, but from its being thereby rendered on too many occasions positively mischievous in its operation.

In situations where horses work hard and "wear hard," Rodway's shoe has been found to be seriously defective in durability. For every two sets of ordinary shoes, three sets of Rodway's will be required; and this, to many persons, would of itself constitute an insurmountable objection to them: at least might do so, were they not informed that the three sets would not probably cost them more than the two of ordinary shoes, owing to the prepared (grooved) bars of iron which Mr. Rodway can supply forges with at little, if any, above the expense of common bars, as well as in consequence of the little comparative labour and workmanship required in the manufacture of the patent shoes. What renders Rodway's less durable than other shoes is, not only the circumstance of the rims having to take all the wear, and becoming soon worn down, but also the want of that hammering, and consequent hardening, which ordinary horseshoes

* In THE VETERINARIAN for November 1842.

undergo under the sledge-hammer. Mr. Rodway proposes to chemically harden his shoes by the sprinkling of them, while hot, with prussiate of potash and common salt, and afterwards immersing them in cold water: but such are processes which one can hardly depend upon the smith for duly performing, and, after all, it is but the superficial case of metal that is hardened, and that soon chips off or wears away. We must, therefore, still continue to be of opinion, that *want of durability* constitutes one of the objections to Mr. Rodway's shoe.

Another evil naturally attendant on light horseshoes presents itself to us in the fact, that reduction of weight and substance is followed by reduction of strength, or force of resistance. The light horseshoe, unable to sustain great pressure, will bend and "get down" upon the sole of the foot, or, incapable of resisting the expansive action of the crust, will "spread" upon the foot, and get out of its place, or even become loose. This is precisely what has happened in some cases with Mr. Rodway's shoes: they have, under the pressure of horses of great weight or high battering action, occasionally bent and got down upon the soles, but oftener have "spread," and got displaced, and even loose, and, in two instances out of twelve, have broken.

Supposing it to be practicable and safe to abstract any of the substance of iron from the ordinary horseshoe, the question arises from what part of the shoe such subtraction had best be made. If from the part through which the holes are punched, as in the case of Mr. Rodway's shoe, reducing the middle of the web to a comparatively thin plate of iron, the consequence is, from want of substance and support, *bilging of the nail-holes*, loss of the fast hold of the nails, and mobility to a greater or less extent of the shoe upon the foot. Although the heads of the nails are much protected by the groove in Rodway's shoe, still it is impossible to prevent their occasionally receiving blows from the ground, the effects of which are, further driving of the heads of the nails into the holes—incapable, from the thinness of substance of their borders, of resisting, and therefore bilging—starting of the clinches, and, every now and then, loosening and loss of the nails themselves. Fresh clinching up has been found to be frequently required, the supply of nails for loose or lost ones occasionally, in the use of the patent shoes. And, though these evils will be diminished by care and attention in the choice of small-headed nails, and in driving them home into the holes, yet will they not, nor can they, on account of the want of substance in the nail-plate, be entirely got rid of; and, consequently, they demand our insertion in the catalogue of objections to Mr. Rodway's shoe.

The question, in which the public have probably taken more interest touching Mr. Rodway's shoe than in any other concerning it, is—*Whether it does or does not operate in preventing the horse from slipping.* This will depend upon the nature of the surface upon which the animal is treading. Neither upon stone nor wood pavements has it been found to have any such effect: we have witnessed horses, shod on Mr. Rodway's plan, slipping about as they trotted along the streets of the metropolis, or were suddenly pulled up, quite as much as others did in ordinary shoes. But upon slippery roads and turf, and other impressible surfaces, Rodway's shoes, from partially sinking into the ground, certainly take a hold which shoes with plain surfaces cannot, and, so far, do save the horse from slipping. Even, however, though the properties of this shoe, in preventing slipping, were great instead of being of little consideration, still are the objections, heretofore stated, to its adoption of too serious and irremediable a character to permit us, even for hunters in hilly or slippery countries, to give it our recommendation. And to this conclusion we have come, not hastily, not inconsiderately, much less through any feeling whatever, either of hostility to the patent or unfriendliness towards the patentee, but after the fullest, and what, in our humble estimation, constituted the fairest, trials to which the shoe could possibly be put.

THE VETERINARIAN, MARCH 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

A MEETING of the Veterinary Committee was held at the Imperial Hotel, Covent Garden, on Monday, Feb. 6th, at which Meeting it was announced that the whole subscriptions received up to that date amounted to the sum of £185..5s..6d., and the expenditure to £51..4s..2d. The statement of accounts and a list of the subscribers was ordered to be printed and circulated.

Professor Sewell and Deputy Professor Spooner were unanimously elected Members of the Committee. The petition has received several alterations, which were unanimously agreed to by the Committee; and in addition to the names of Messrs. Turner, Goodwin, Dick, and Mayer, the Committee are happy to announce that it has received the signatures of Messrs. Sewell, Spooner, and Simonds.

COLLEGE OF SURGEONS.

THE HUNTERIAN ORATION.

February 14, 1843.

[We make no apology for the following sketch of the professional career of Sir Charles Bell. His reputation as a surgeon stood deservedly high, but as a physiologist he occupies the noblest station. To the veterinary student his name will be ever dear; for some of his most valuable elucidations of the nervous system were early developed at the Examiners' Board. We proffer our warmest thanks to Mr. Arnott for the truly interesting account he has given us of the gradual progress of the affair.]

“SIR Charles Bell was born in 1775, and, after studying some years at the high school of Edinburgh, began the study of anatomy under his brother John. That brother, twelve years older than himself, was already in high repute, both as a surgeon and as a lecturer. The instructions of such a teacher could scarcely have been heard without profit by an ordinary pupil: their effect upon Charles Bell was shewn by the publication, in his twenty-second year, of the first volume of his ‘System of Dissections’—a work marked by his characteristic originality.

“At an early age he was appointed Surgeon to the Royal Infirmary; but the feuds which at that time distracted the profession in Edinburgh, as well as other causes, induced him to try his chance in the metropolis of the world, and Mr. Bell came to London in 1806. The rest of his career is well known to you: at any rate, it is unnecessary to dwell on the professorships which he held, or the other marks of public distinction which were heaped upon him. I will content myself with touching upon a few of the more prominent points of his genius and character.

“As a surgeon Sir Charles Bell ranks high, ‘if not first in the very first line.’ His Letters on the Diseases of the Urethra, his Surgical Observations, and other works, shew how deeply he had studied, and how diligently he had practised, the art which he professed. His dexterity and coolness as an operator were remarkable; yet he went to operations with the reluctance of one who has to face an unavoidable evil; in this respect resembling Hunter, and many other first-rate surgeons. Like Cheselden, who is said always to have turned pale when about to cut for the stone, Bell’s cheek was often seen to blanch on proceeding to operations performed with the utmost self-possession and skill.

“As a proof of the zeal with which Mr. Bell cultivated surgery, I may instance his hurrying to Haslar after the battle of Corunna, and to Waterloo after that of the 18th of June, in order to study gunshot wounds.

“Still more eminent was he as a teacher of anatomy. In the lecture-room he shone almost without a rival. His views were nearly always solid, and always ingenious; while his manner and language enchained the attention of his audience. Dull, indeed, must have been the pupil who could have slumbered when Charles Bell was in the professorial chair. In his hands the dry bones lived again, imagination clothing them with the textures which had once invested them. A muscle was no longer a mere bundle of fibres, rising here and inserted there; it was a guide to the surgeon's knife in some important operation, or, kindling with hidden fires, seemed to betray, by the anatomy of its expression, the emotions that lurked within. He taught his pupils to think; and, interesting as anatomy is, even if considered as a mere branch of natural history, he taught them to value it most of all as a guide to the art of healing. The time, however, will arrive when all the contemporaries of Sir C. Bell, all in whose ears those impressive tones still linger, shall have been swept from the scene: yet his fame will still live; he will be remembered as the discoverer of the various functions of the nervous system.

“Let me be permitted to make an observation or two on the opinions of physiologists concerning this subject, before and since the publication of Sir Charles Bell's views.

“It is well known that each spinal nerve arises by two roots; and it is now generally admitted that to the anterior one belongs the power of controlling motion; to the posterior one that of governing sensation. It had formerly been thought that each spinal nerve possessed in common the power of ruling both motion and sensation, and, in some cases, additional functions. This may be called the popular theory. Yet glimmerings of the truth had occasionally been forced, as it were, upon reflecting physiologists. For the ordinary theory was obviously insufficient to explain why sensation remains in a paralytic limb when the power of motion is lost; and why, on the other hand, motion survives feeling in cases of anæsthesia.

“But, although it had been conceived by some that the nerves of sensation were distinct from those of motion, no progress had been made in pointing out the principle in the anatomy on which one nerve could minister to sensation, another to motion; and the singularly original remarks of Hunter in his paper on the Nerves of the Organ of Smell, concerning two or more nerves coming from different sources to supply a single part, had fallen unproductive; they had not met with a congenial soil.

“The multiplicity, intricacy of arrangement, and distribution of the nerves, at an early period engaged the eager attention of Sir C. Bell ; and I have it from one who, on several occasions, so far back as 1806, has seen him rise from the contemplation of the subject with the exclamation, ‘We must make something out of these nerves.’ Already, in 1807, he had got a glimpse of the fundamental principles of his subsequent researches, as the extracts I am about to read will shew. They are from letters addressed to his brother George Joseph Bell, then at the Scotch bar, now professor of law at the University of Edinburgh (the talents of the family had not been quite engrossed by anatomy and surgery), and fortunately the letters were written before the revival of envelopes. The first from which I quote bears *in dorso* the post-mark, London, Dec. 5th, Edinburgh, Dec. 8th, 1807.

“‘My new anatomy of the brain occupies my head almost entirely. I hinted to you that I was *burning*, or on the eve of a grand discovery. I consider the organs of the outward senses as forming a distinct class of nerves from the others. I trace them to corresponding parts of the brain, totally distinct from the origin of the others. I take five tubercles within the brain as the internal senses. I trace the nerves of the nose, eye, ear, and tongue to these. Here I see established connexion—there the great mass of the brain receives processes from the central tubercles. Again, the great masses of the cerebrum send down processes or *crura*, which give off all the common nerves of voluntary motion, &c. I establish thus a kind of circulation as it were. In this inquiry I describe many new connexions—the whole opens up a new and simple light, and the whole accords with the phenomena, with the pathology, and is supported by interesting views. My object is not to publish this, but to lecture on it, to lecture to my friends—to lecture on it to Sir Joseph Banks’ coterie of old women—for it is really the only new thing that has appeared in anatomy since the days of Hunter, and, if I make it out, as interesting as the circulation, or the doctrine of absorption. But I must have time. At the end of a week, and I will be at it again.’

“In another (post-mark, Dec. 1807)—‘I really think this new view of the anatomy of the brain will strike more than the discovery of the lymphatics being absorbents.’

“And in a third (post-mark, March 28th and 31st, 1808)—‘I have been thinking of having a room five or six miles from town, and pursuing there my physiology of the brain—*that which is to make me, I am convinced.*’ This may be called the second-sight of genius.

“At length, in an Essay entitled ‘Idea of a New Anatomy of the Brain,’ printed in 1811, Sir Charles Bell developed some of the principles destined to exercise so great an influence on the

theory of the nervous system. Having called attention to the prevailing doctrines of the anatomical schools—that the mind, by the same nerves which receive sensation, sends out the mandates of the will to the moving powers—he proceeds to announce his own opinion, that the parts of the cerebrum have different functions, and that the nerves which we trace in the body are not single nerves possessing various powers, but bundles of different nerves, whose filaments are united for the convenience of distribution, but which are as distinct in office as they are in origin from the brain. Pointing to the fact of the medulla spinalis having a central division, and a distinction into anterior and posterior fasciculi, he relates how he was thereby led to make experiments, of which he describes the results, upon the anterior and posterior columns of the spinal marrow, and upon the anterior and posterior roots of the spinal nerves, and how he thereupon came to the conclusion that every nerve possessing a double function obtains this by having a double root.

“Adhering to the important principle thus laid down, Bell next directed his inquiries to the facial nerves, and, aided by his indefatigable pupil and coadjutor, Mr. John Shaw, instituted experiments to assist him in determining their functions, more especially that of the portio dura of the seventh pair, and those of the fifth. Happily he did so; for, without the fortunate circumstance that in certain parts of the body, especially on the face, the nerves of sensation and motion are distinct throughout their whole course, his great discovery could never have been clearly established.

“It was about this time, when he was making the most important advances in obtaining positive and undeniable proofs of the truth of his doctrines, that we find him, under an impulse like that exhibited in 1807, addressing his brother in Edinburgh in a letter, bearing the date of the 17th of August, 1819, to the following effect:—

“‘When you left us, I told you that I was to sit down to my notes of the nervous system. Believe me, this is quite an extraordinary business. I think the observations I have been able to make, furnish the materials of a grand system which is to revolutionize all we know of this part of anatomy, more than the discovery of the circulation of the blood. I have a good deal still to do. How I am to bring it forward I do not know. I think by lectures in the first place, then by a little essay explaining the outline of a new system, and, finally, by magnificent drawings and engravings of the whole nervous system. In the meantime, I am making gigantic drawings of the nervous system for my class.’

“The gigantic drawings for his class to which he alludes, were

large plans of the three great classes of nerves, under which he arranged those of the human body.

“Two years afterwards, in 1821, a general account of the results of his observations was communicated to the Royal Society, in a paper read before that body, and apparently intended as an introduction to others which were to follow, and did follow.

“Notwithstanding the novel and important matter it contained, the ‘Idea of a New Anatomy of the Brain’ had failed to attract attention. Not so the first paper in the Philosophical Transactions. Bell’s views and opinions were now questioned—doubted—denied: then a certain amount of truth allowed to them; and, ultimately, the real and substantial credit of a patient, laborious, and original inquiry was attempted to be wrested from him, and attributed to others, whose single merit, in this part at least of physiology, consisted in their adoption of that key which Bell had invented, fashioned, and shewn how to use—a key, without which the secrets of the nervous system, so far as they are now known, had probably yet remained concealed.

“In estimating Bell’s claims as a physiologist, we are not called upon to regard his papers and memoirs on the nervous system as complete and perfect. Along with all that is distinct and precise, we may allow that there are some allegations not quite specific—allegations which a mind more severely disciplined might not have hazarded. We may grant that the functions of the posterior roots of the spinal nerves were therein suggested rather than positively stated. We may acknowledge, as he himself did acknowledge, that he misinterpreted an experiment in his first attempt at proving that which he afterwards did prove through Mr. John Shaw, that the fifth nerve is a nerve of motion as well as sensation. And we may agree in receiving with doubt, or at least without conviction, as not yet proved, his views with respect to certain nerves being superadded in the higher class of animals, for the purposes of respiration.

“But, after all these acknowledgments, there remains to Bell, clearly and unequivocally, the merit of having first shewn—

“That, in investigating the functions of the nervous system, we must direct out attention to the roots and not to the trunks of the nerves.

“That the nervous trunks conveying motion and sensation consist of two distinct sets of filaments in the same sheath.

“That the filaments for motion form a distinct root from those for sensation, and that the anterior roots are for motion; leaving it to be inferred that the posterior are for sensation.

“That the portio dura is a nerve of motion, and the fifth a nerve both of motion and sensation.

“And lastly, of having been the first who, dissatisfied with the observation and study of the mere form of the various parts of the nervous system, applied the method of experiment to aid him in determining their functions.

“In a word, there belongs to Bell the great discovery, the greatest in the physiology of the nervous system for twenty centuries, that distinct portions of that system are appropriated to the exercise of different functions.

“Valuable practical precepts were immediately deduced from these discoveries, and at once applied by Sir Charles Bell and Mr. John Shaw. Perhaps the most important was the distinction of a local nervous affection from that which depends on disease of the brain.

“Even supposing, however, that this were the sole practical lesson as yet deduced from Sir Charles Bell’s discoveries, it would be unjust to measure their merit by this alone. Independently of the direct instruction to be derived from them, they have brought physiologists to the true path ; and, should the dim veil which nature has thrown over the operations of the nervous system be once drawn up, it will ever be remembered that Charles Bell first constructed the machinery for raising it.

“It is instructive to remark and to remember, that Sir Charles Bell did not make very numerous experiments on living animals ; but, guided by a careful study of the anatomy of the parts, and reflecting on the spontaneous experiments, so to speak, furnished by disease, he was led to form views, which, supported by a few well-planned experiments, discovered to him the truth, and enabled him to convert the guesses of former observers into admitted facts.

“Had Sir Charles Bell not been a surgeon or a physiologist he might have been an artist, so admirable were his drawings, and so exquisite his perception of the beautiful. This talent was with him a favourite, and might be cited as an instance of ‘ the ruling passion strong in death ;’ for he was employed in sketching the gay scenery of Worcestershire but a few hours before his decease ; and the leisure hours of the last few months of his life had been employed by him in preparing for the press a new edition of his work on the Anatomy of Expression. I ought rather to say re-writing it, so much additional manuscript does it present, and so many additional illustrations from the study he had recently made of the great productions in painting and sculpture at Rome and Florence.

“It was in the summer of 1840 that his love of art led him to Italy, in order that he might become more intimately acquainted with the master-pieces that enrich it. During this tour he kept

a journal, which I have had the gratification of seeing. It consists of three volumes of sketches and remarks. He passed through Paris and Lyons, and entered Italy by way of Genoa. Here he was struck by the contrast between streets as narrow as 'Blackford Wynd' and the gorgeous architecture which flanks them. His hotel had once been a palace; and as he sat on a velvet cushion in an arm-chair of gold, while a fountain played from a marble lion, and the too vivid light was moderated by orange-trees and silk curtains, he felt that he was in *Genoa la superba!*

"He enjoyed what he called a day of Raphael in the Vatican, and was worthy of enjoying it. His piercing eye detected, as we might expect, some errors in the anatomy of Raphael's drawings. 'But do not think of that,' he adds, 'but of the fine comprehension of nature, the feeling and understanding of the human family. Man appears a superb creature in the Vatican.'

"On the last day which he spent in Rome he stood by the Palace of the Cæsars, from which he took his sketch of the Coliseum. 'It is a place,' he says, 'to raise strange and solemn thoughts.' A mountain has been formed there by ruins, now covered with vineyards and cultivated fields. 'Pillars and entablatures make the way uneven, and the acanthus is growing by the side of the broken capital, on which it is chiselled.'

"So much inventive genius and such indefatigable industry are rarely united in the same person; and when we add the warmth of his friendship, and, among his lesser qualities, the exquisite refinement of his taste, the combination is not often to be paralleled. He had some of the irritability that so often accompanies genius; yet, take him as he was, he has left a blank not easily filled up, either in the republic of science or the circle of his friends."

Medical Gazette.

COMPARATIVE FREQUENCY OF PHTHISIS IN MAN AND IN ANIMALS.

M. RAYER lately read a very elaborate and interesting paper, at the Academy of Sciences, entitled, "Fragment of a comparative Study of Phthisis Pulmonalis in Man and in Animals." The following are his conclusions:—

1. Tuberculous phthisis is of all chronic diseases the most common both among men and animals.
2. In man and other mammiferous animals, tuberculous matter

may be readily distinguished from fresh pus, which always contains granular globules. In birds, the characters of tuberculous matter are less decidedly marked: the artificial introduction of foreign bodies into the lungs and muscles produces, not a white, opaque secretion, with granular globules, but a dry yellowish substance, having no globules, the physical characters of which approach those of tubercles in the mammalia. In reptiles, fishes, and insects, the characters of tubercles are still less distinct.

3. Pus, in the mammalia, particularly in the horse, when deposited for a long period in the organs, undergoes successive transformations, which sometimes give it the appearance of tuberculous matter.

4. Pulmonary tubercles in man and quadrupeds have a gray tint. In the lungs of the cow, tuberculous matter has usually a yellow chamois-leather colour.

5. In man and animals, the central softening of tubercles cannot be attributed to inflammation. It never presents globules of pus. The peripheric softening of tubercles is, on the contrary, most commonly promoted by inflammation of the surrounding tissues. It is almost always mixed with globules of pus.

6. The yellowish matter which is found in the hydatid cysts of ruminating animals after their rupture has some analogy with the matter from the lungs; but the cysts filled with this yellow matter contain almost always the remains of the hydatid sacs, and sometimes a certain amount of pus.

7. The cretaceous or calcareous concretions, composed chiefly of carbonate and phosphate of lime, which are seen in the lungs of men and animals, should not be considered, as has been heretofore the case, as nearly always a final modification of tubercle; they are often in man, and oftener in the horse, the remains of a small deposit of pus.

8. In many animals there are formed in the lungs verminous granulations and glanderous granulations, which should be distinguished from tuberculous granulations.

9. In quadrupeds and in certain birds transported to temperate from warm climates, the development of phthisis has its maximum of frequency, almost to the exclusion of other chronic diseases. It is likewise promoted by a change of climate, and of alimentation in other animals coming from the North, and particularly in the reindeer.

10. Phthisis, which is rare in solipedes domesticated, is still more so in the carnivorous animals. Nevertheless, in spite of the prophylactic influence of a strong constitution and animal diet, many carnivorous animals, the domesticated cat, and, especially, the lion and tiger, when transported into a temperate

climate, may be attacked with pulmonary phthisis. This same infrequency of phthisis is found among birds of prey.

11. It is found that, of carnivorous animals, the domesticated dog, and of solipedes the horse, are much less subject to tubercles than to cancer, a disease considered by Camper as unknown among animals.

12. In ruminating animals, particularly in the bovine tribe, phthisis is often found together with vesicular worms, particularly the echinocochia; but there is no foundation for the opinion that there is any connexion of transformation or succession between these hydatids and tubercles.

13. The fatty degeneration of the liver is generally a sign of phthisis in man and of general obesity in birds.

14. The alterations of the bones, which are observed in tuberculous monkeys, and particularly in those of America, appear analogous to the enlargement and spongy softening of the bones in phthisical and scrofulous children. Similar alterations are noticed in the bones of the carnivora of warm countries, transported into temperate latitudes.

15. While the frequency of pneumonia, and the infrequency of phthisis, in the domestic dog, appear to indicate a want of connexion between these two diseases, it is otherwise with the calf, the cow, and the milch ass, in which the deposit of tuberculous matter almost always coincides with a chronic progressive pneumonia.

16. Phthisis is hereditary, but it is almost never congenital, even in the incipient stage.

17. In phthisical subjects, the sperm contained in the vesiculæ seminales has few or no spermatic animalcules.

18. Ulcers of the larynx, trachea, and bronchiæ, are not of the same import in man and in all animals. In the former, they almost always denote pulmonary phthisis, and sometimes syphilis; in quadrupeds, a general tuberculous affection; in solipedes, almost always glanders.

19. In pneumothorax, vegetations may be formed upon the pleura of a phthisical patient, as occurs sometimes in the air-cells of birds that are tuberculous, or labouring under a lesion of the organs of respiration. In this case, as in all those noticed in the vertebrata, the development of this species of vegetation is always a secondary phenomenon.

From the foregoing conclusions, M. Rayer developed some general reflections, to which he called the attention of the Academy.

The progressive connexion which anatomy and physiology demonstrate in the animal series is shewn also by pathology.

It is owing to a parallelism of organization that phthisis runs through so large a number of the vertebrata, until, as the scale of organization is lowered, the distinguishing characters of tubercles disappear, and are not appreciable by our present means of investigation.

A predisposing cause in the production of tubercles in animals is captivity or domestication; and, more comprehensively, a decided and prolonged change in the natural state of existence. The reindeer coming from the North, the monkey from the South, both meet with the same end, when brought into captivity, although starting from opposite points. This cause, in intensity of action, may be compared to the bad lodging and nourishment which, in man, so fearfully develope tuberculous phthisis.

Archives Générales de Médecine, August 1842.

COURT OF EXCHEQUER, FRIDAY, FEB. 3.

(SITTINGS AT NISI PRIUS, BEFORE MR. BARON GURNEY.)

MR. THESIGER and Mr. Birch were counsel for the plaintiff, Mr. Jervis and Mr. Bramwell appeared for the defendant.

The plaintiff in this case is a gentleman of property, residing in Derbyshire; and this action was brought by him to recover compensation from the defendant, the well-known dealer in horses in Piccadilly, for certain losses sustained by him on the purchase of a horse with a warranty.

The defendant pleaded, first, that there was no such warranty at the transaction in question; secondly, that the horse was, in point of fact, sound at the time.

From the evidence adduced by the plaintiff, it appeared that the plaintiff and a friend first saw the horse at the defendant's stables on the 24th of September last, when he was warranted sound by Rice, the defendant's manager, and the sum of one hundred and twenty guineas asked for him. Nothing was done on that or on the following day, when the horse was again inspected by the plaintiff, but on the 26th he was ridden in the Park by the plaintiff for an hour, after which one hundred guineas were offered for him. This was at first rejected; but after speaking with the defendant, that person followed the plaintiff, and told him that his offer would be taken. The money was accordingly paid, and the horse sent down into the country, where it had no sooner been attended to by the groom, than he was pronounced by him to be affected with thrush in the off fore-foot.

This was not, however, communicated by the plaintiff to the defendant until the 17th, when, in consequence of the receipt being sent down without a warranty attached, the plaintiff complained that the horse was unsound.

A correspondence ensued thereon, and the result was, that he was afterwards sold at Derby, and bought by an agent of the defendant for forty-one pounds, and this action brought to recover the difference between that sum and the price originally paid for him, together with sundry expenses.

On the part of the defendant, Rice, and the parties connected with the stables, deposed to the horse in question having been bought in the country as a sound horse; and to the fact of his being perfectly sound, and free from any thing like a thrush, at the time of the sale.

As to the first plea, however, Rice seemed to admit that he had told the plaintiff on the day of the sale that the horse was sound, so that that was removed from the consideration of the jury by the learned judge.

On the other plea, evidence was adduced to shew, that when the horse reached the defendant's stables, after the sale at Derby, though its fore feet were in a very distressed state, yet that must have been produced by neglect after the purchase by the plaintiff, as, within a week, he was again sold by the defendant to a Mr. Bush, in the country, as a sound horse, for one hundred and thirty-five guineas, and no complaint had ever been made of him from that time to the present. It was therefore contended, that the lameness and disease then existing were not the result of any long standing thrush, causing contraction of the hoof and consequent pressure on the sensitive part of the "frog," in which case the unsoundness would be of a permanent character, but that it must have been produced by improper "stopping," and neglect in the plaintiff's stables, in which case the "thrushes" were quite capable of being obviated or removed by due skill and care in a few days, while they might be produced in as short a time.

Mr. Thesiger having replied at great length on the whole case, in which he took occasion to disclaim any imputation on the character of the defendant, Mr. Baron Gurney left it to the jury to say whether the horse was lame, in point of fact, on the 26th of September.

The jury, not being able to agree upon their verdict, retired, and remained locked up until ten o'clock, when they returned a verdict for the plaintiff—Damages £66.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from page 120.]

A ROWEL may be inserted under the chest, and turpentine may be used to foment the abdomen and fetlock joints, and to attract the blood to the extremities. For the same purpose, ligatures may be tied round the legs to prevent the return of blood: diuretics may be also employed to determine the blood to the kidneys. Mr. Coleman has procured a superficial inflammation under the chest, in which he has found very great success, by making an incision through the skin and inflating it with air. And if inflammation was not thus produced, he injected spirits of turpentine.

It may be inquired, why stimulants are employed in a disease where the stimulus is already too strong? It is to be remarked, that the stimuli recommended are generally local, to attract as much blood as possible from the diseased part, while the general stimulus is lowered by bleeding. All medicines which act on a general scale of excitement, as cordials or purgatives, are absolutely forbidden; and although diuretics may, in a small degree, increase the general stimulus, yet the good effects are more conspicuous from the quantity of blood attracted to the kidneys.

The pleura is a membrane which covers the lungs and lines the cavity of the chest. An inflammation of this membrane is treated by authors as a separate disease; but as the cause, symptoms, and cure, are precisely the same as in inflammation of the lungs, it needs no further explanation.

Another disease to which the lungs are subject is an obstruction of the air-cells, generally termed thick wind. It frequently takes place after some slight inflammation or violent exercise, by which a quantity of coagulable lymph is forced from the small mouths of the arteries terminating on the surface of the air-cells, which, coagulating, prevents the admission of air. If this obstruction is of an extensive nature, the lungs will have the appearance of scirrhus.

The symptoms of this complaint are so common, that a mistake can seldom occur. One of the principles which distinguishes it from a broken wind, is an equal difficulty in inhaling and exhaling the breath, which is not the case in broken wind.

If this complaint is attended to in its recent state, a cure may

be expected, which is very difficult after it has continued some time. If the horse is in full condition, take four or five quarts of blood from a large orifice, which may be followed by a purge, to empty the intestinal canal. This will relieve the diaphragm or midriff from pressure, and thereby afford more room for the obstructed lungs; and, in order to assist this, his food should be lessened in quantity, and increased in quality. His water must be given in small quantities, not exceeding a gallon at one time, but may be repeated three or even four times a-day if necessary, as the course of medicine recommended may, perhaps, increase the animal's thirst.

The physic may be as follows:—

Take of aloes one ounce, calomel one drachm, oil of aniseed or mint twenty drops; soft soap sufficient to soften it to a mass.

If this medicine does not operate in forty-eight hours, it may be repeated. After it operates, one of the following bolusses may be given twice a-day for a month or six weeks:—

Take of gum ammoniacum twelve ounces, myrrh four ounces, powder of squills one ounce, vinegar of squills or turpentine sufficient to soften to a mass, and divide into twenty-four bolusses.

If gum ammoniacum or myrrh cannot be procured, yellow resin may be employed as a substitute.

The animal should not be exposed to any current of air, and his exercise should be particularly attended to. At the commencement, gentle exercise twice a-day may suffice; then a gentle gallop morning and evening will be necessary, if the lungs are not found to be too much oppressed.

If the obstructions are not removed, the lymph will sometimes accumulate and burst the cells. This rupture of air-vessels will also proceed from violent exercise, in which the lungs are so much exerted as to rupture the air-vessels, which, decreasing in number, increase in magnitude. In inspiration, the air finding no resistance, rushes into and fills the lungs in an instant; but, the economy of these cells being destroyed, there is not that equal pressure in exhaling, and the animal is therefore very considerably longer in expelling it than in the sound state; while in thick wind the air enters the obstructed cells with difficulty, and is with the same difficulty expelled.

A rupture of these cells is better known by the term broken wind.

The only palliation this disease is capable of receiving must be confined to the diet, as recommended in an obstruction, or thick wind. If the animal could be kept on a pasture land, he would be less affected than at his piquet on dry ground.

4.—DISEASES OF THE ABSORBENTS.

Farcy is an inflammation of those lymphatics which lie near the surface of the skin, and seldom affect those that are deeply seated. It is generally observed first in the hollow of the thighs, being the parts where these vessels are most numerous. Thence it extends to any other part of the body, and when it reaches the head it becomes more virulent, and takes the name of glanders.

The remote cause, I imagine, must be debility, from the tonic system, which relieves it. When it is first observed there is an inflammation of the vessels, which appear like small red buds, and frequently branch off in bunches or clusters that are very sore; they afterwards suppurate, and become ulcers, which, affording a considerable quantity of purulent matter, is absorbed in the system, and produces ulcers in other parts. The nose and lips will frequently swell, and become very painful, from the numerous small absorbents in those parts, which also become inflamed.

It is possible that a loss of tone in these vessels is the first process towards this disease; obstruction is the consequence of debility, and inflammation is the effect of obstruction. This last is, probably, the state they are observed in when they assume the form of red pimples, after which the obstructed fluid corrupts, and produces the same effect on the contiguous parts, and they become ulcers. The small intervals between each valve are the spots inflamed, which accounts for their appearing in bunches.

What supports this opinion is, the animal being more liable to this disease after long and severe exercise, or an active campaign, while it seldom attacks horses that are kept in regular exercise. During violent exertion for any length of time, the action of the vessels is increased throughout the system, and always after increased action a proportionate debility ensues. During action these vessels are particularly affected by the muscular friction, and if this continues for a length of time, particularly if the animal be of a lax habit, the vessels lose their tone, and they can no longer propel the fluid they circulate, and obstruction, &c. ensues.

The contagious power of this disease, I believe, is not at all accounted for. Whether these ulcers are of a putrid kind, which is very probable, or whether contagion is a property of ulcers of the lymphatics, is not known; but I believe the contagion is far from being so powerful as is generally imagined. I must here remark, that many cases which are termed farcy by the natives,

are merely small superficial pustules, or ulcers, proceeding from poverty of blood, and by no means seated in the lymphatics. They are generally the result of an impoverished treatment, for poverty is the usual mode of treating almost every disease. As the major part of diseases arise from poverty of blood, it will not excite our surprise if nasty, low, itchy ulcers follow, that are best removed by stimulant applications, and a nourishing cordial diet, with regular exercise.

In the section on general diseases, it was remarked that, when stimulants had been used to excess, debility and languor was the consequence, and a still stronger stimulus was required to rouse the languid powers; thus, farcy being the immediate effect of exhaustion, a very diffusible stimulating plan of cure must be employed.

The ulcers may be fired with a hot iron, which will increase the action of the absorbents in the corresponding branches to carry off the obstructed fluid. In this country I have never known the following application to fail:—Take of oil of vitriol one part, of turpentine and tar each two parts, with which the spots may be touched twice a-day; and, if ulcers exist, tow may be dipped in the mixture, and pressed pretty forcibly into them, and left until they drop out. Or the following solution may be used:—Take of corrosive sublimate finely powdered one drachm, spirits of wine sufficient to dissolve it, then add of turpentine and water each half a pint. A strong exciting course of medicine should also be employed internally. Ponies in high condition, with a loaded circulation, and leading an inactive life, will be also liable to this disease. The cure is, however, similar. A loaded circulation, oppressing and exhausting the heart and vessels, produces general debility equal to over exercise. The only difference required in the treatment will be, that, in cases proceeding from inactivity and oppressed circulation, the animal should lose from four to five quarts of blood, and a purge may succeed it. The quantity of his food may be rather lessened, but by no means in quality; after which, his treatment may be, both as to external and internal applications, the same as in the farcy of the first description.

One of the following exciting bolusses may be given every four days:—Take of yellow resin twelve ounces, Venice turpentine four ounces, camphor three ounces, spirits of turpentine or brandy sufficient to make into a mass, which divide into twelve bolusses.

In the intervening days, one of the following tonic bolusses may be given morning and night:—Take of opium two ounces,

camphor one ounce, blue vitriol half an ounce, oil of aniseed or mint one ounce, soft soap sufficient to reduce the whole to a mass, which divide into twelve bolusses.

The exercise should be particularly attended to, and must be regulated according to the strength of the animal and what he has been accustomed to. If in high condition, trotting exercise three or four miles twice a-day will be useful; if poor and low, a shorter distance of walking exercise will suffice.

This disease frequently terminates in what is called a chronic farcy, which is very favourable and very frequent in this country. The animal will perform his work and enjoy his health as usual, without any danger of communicating it by infection. The only remains will be a hardness about the parts that have been affected, conspicuous to the touch but scarcely perceptible to the eye.

If, however, the disease should predominate (which I have never known in this country if treated as above), it will frequently terminate in glanders; but, as this is also frequently mistaken, I shall treat it as a separate disease: previous to which I shall describe a very common disease or complaint, known by the name of water-farcy, in opposition to the former, which is termed farcy-bud.

The water-farcy generally pursues the same course as the former, making its first appearance in the course of the absorbents along the abdomen and down the thighs.

I have reason to believe that this disease is precisely the same as the former, as to remote causes, differing only, perhaps, in one effect. The lymphatics obstruct and rupture in the farcy-bud, while in the water-farcy a total debility prevails, and they are deprived of the power of taking up the deposited fluid: and an accumulation or partial dropsy ensues, which is observed in the tumours, which become of considerable extent, and contain a colourless fluid as in dropsy.

This disease is removed by the same mode of treatment recommended in the former, with this exception, that bleeding must on no account be permitted; and if the animal is in condition, a brisk dose of physic may be substituted*, as aloes eight drachms, calomel one drachm and a half, oil of mint or aniseed thirty drops, syrup or soft soap sufficient to form into a bolus.

* I believe that sudden transitions in the climate may also produce this disease. By accounts I have received from a regiment of cavalry in Bengal, I am informed that the rainy season is generally accompanied by a dozen or more farcied subjects. Great inconvenience is also stated to arise from the innumerable flies attacking the sores; but this, I should imagine, would be done away by covering the ulcers with the unguent recommended in the farcy-bud.

The external applications must also be more fluid, as in this case there are seldom any open sores; with this intention, any of the following liniments may be applied once or twice a-day:—

Take of Spanish flies powdered one ounce, spirits of turpentine one pint—mix for use; or,

Spirit of wine one pint, camphor one ounce, corrosive sublimate one drachm—mix for use; or,

Vinegar one pint, white vitriol and crude salt of ammoniac of each half an ounce—dissolve them.

[To be continued.]

RUPTURE OF THE LEFT VALVE OF THE HEART IN A BITCH.

By M. LEBLANC.

THE more my researches into the diseases of the heart increase, the more am I convinced that they are of frequent occurrence among quadrupeds. Two among the cases which have lately come under my notice have appeared to me to offer points of considerable interest. I will briefly relate the history of them.

A black pointer of the Scotch breed, belonging to M. B., although having, by reason of her excellent condition, every appearance of good health, was often ill, especially after running fast. She frequently fell into a fit after having run a little way, and sometimes even after playing in the yard. I saw her several times in 1841, and bled her after some of these fits. When I examined her, I could plainly perceive considerable and violent spasmodic motion of the heart. The sounds of the beating of the heart were irregular and convulsive.

In 1842, the bitch remained in my infirmary from the 3d of May to the 24th of June, in order to be cured of an attack of mange. During her stay in the hospital she again had these fits or swoonings several times repeated. The overseer told me that these attacks almost always followed after having been playing with other dogs. She appeared as if struck by lightning, and remained motionless for several minutes, her gums losing their natural appearance and assuming a bluish hue. After the lapse of a few minutes she again arose as if nothing had been the matter.

On the 14th of October she was again returned to my infirmary on account of the frequent occurrence of these fits. I watched her carefully. The spasmodic beatings of the heart were very violent, and the motion produced by them was propagated over the whole of the body whenever the animal took any considerable exercise. I bled her twice in eight days, and administered several doses of foxglove to her. The fits appeared to become less frequent, but on the 28th of October the animal fell for the last time, and expired immediately.

The post-mortem examination was made two hours after death. The cavity of the pericardium contained a red clot of blood which enveloped the whole of the heart; it was thicker in the parts which corresponded with the valve of the heart and on the left ventricle. Near the base of the left valve of the heart, on the external part of that viscus was an irregular rent two inches long. It crossed the wall of the valve of the heart, which was very thin in this place. The size of the heart was very small considering the height and bulk of the dog. The walls of the ventricles, and particularly of the left ventricle, were very thick. The cavity of the left ventricle was very small. There was evidently a concentric hypertrophy of these ventricles*. The left valve of the heart was of great size and the heart of very small dimensions, at least relative to the surfaces.

The immediate cause of the rupture of the valve of the heart had evidently been an increase of circulation, brought on by an increase of exercise, but the remote cause consisted in the remarkable thinness of the walls of the valve of the heart. This case is remarkable in more than one respect: first, because examples of rupture of the valve of the heart are very rare; and, secondly, because this rupture had its seat in the left valve of the heart, while usually, in both the human being and the quadruped, it takes place in the right, and this, without doubt, because the walls of that valve actually are thinner.

* In 1840, I published an abridgment of my researches respecting the diseases of the heart, and I gave several examples of the normal proportions of the heart among horses and dogs.

SOME CONSIDERATIONS IN FAVOUR OF THE LEGAL
PROJECT PRESENTED TO THE CHAMBER OF PEERS,
WITH REFERENCE TO A CHANGE IN THE POSITION
OF THE FRENCH ARMY VETERINARY SURGEONS.

*By M. RENAULT, Director of the Royal Veterinary School
at Alfort.*

[It is with unfeigned pleasure that we solicit the attention of our readers to this memorial. They will pardon its length, and join with us in the heartfelt wish that the French veterinary surgeon may at length occupy that rank in society to which he has an undoubted claim.—EDIT.]

THE project of a law, relative to the amount of the pay to be received by the veterinary surgeon on his retirement from actual service, and the rank which he shall be permitted to claim, has been adopted by the Chamber of Deputies, and will shortly be discussed in the Chamber of Peers.

Enabled by my situation in our schools to comprehend all the reasons and the bearing of this project; having long lamented the serious inconveniences which result to the army from the actual position of the veterinary surgeons; being deeply convinced of the utility and the necessity, with reference to our cavalry, of the measures proposed by the government; I have thought it my duty and connected with the interest of my country and of the useful men that issue from our schools, to submit briefly to the Chamber some considerations which may induce it to modify the opinion that it seems to have formed respecting the measures that have been brought before it. I am the more incited to this, if I am rightly informed that the principal object of the project, already so seriously modified by the commission, will probably be farther attacked by some honourable peers, to whose opinion their high military position and incontestable merit will give great weight in this question.

Nevertheless, to the legitimate and powerful authority of the eminent men whose opinion I am about to combat, I shall oppose another still more powerful and more legitimate, namely, that of reason, of justice, and the common interest of our country. The Chamber to whose understanding and unimpeached impartiality I address myself will determine whether I am wrong.

If there is a fact incontestable and unfortunate, it is the fre-

quency of the diseases which prevail among the horses of our regiments, and the frightful mortality by which they are decimated. Every year our losses of this kind, and, at the same time, the millions of money which they subtract from our treasure, compromise seriously our military situation, and most seriously weaken our cavalry force. We add, that this fact, already sufficiently serious in itself, acquires a new and fearful character in the deficiency of our resources as it respects the cavalry, and the extreme difficulty to keep up our remounts. We, more than any other nation in Europe, should feel a deep interest in the preservation of our cavalry, because we, more than any other country, have not the means of replacing them.

Then, since our great losses, with reference to our cavalry, are occasioned by the serious maladies that destroy the inhabitants of our barracks, it is clear that the first object which the Minister of War should endeavour to accomplish in so unfortunate a situation should be to surround himself, and the various receptacles of our troops, with the advice and experience of persons capable of recognizing the causes and preventing the occurrence of these unfortunate circumstances; men, at least, who may be able to diminish the frequency of these unfortunate circumstances, by combatting them with more discernment.

Thus situated, it is evidently the duty of the administration to examine whether it has done all that it ought to have done, in order to bring and more especially to attach to the army veterinary surgeons whose information and experience offer the most desirable guarantee as to the full discharge of their duty; whether it has given them a position in the cavalry service that will encourage them to do well, properly recompensing their services, and at the same time permitting them to exercise their peculiar and desirable influence on the health and general treatment of the troops. The illustrious Marshal, who at present superintends the war department, has studied and fully comprehended this. He is perfectly aware of that which is essential to the proper management of the horse and the duty of the military veterinarian; and therefore he is about to propose in the Chamber of the Peers some highly useful observations in the management of the cavalry service.

Before the establishment of the royal veterinary schools in 1763, and during the eleven years that followed this period, the treatment of the horses in different regiments was entrusted to the farrier-majors, *maîtres marechaux*. It was not until 1774 that young men began to be sent to Alfort, and who, on their leaving the school, began to exercise their profession in the cavalry regiments under the name of *artistes vétérinaires*, and by which they con-

tinued to be distinguished until 1813. An imperial decree then established two classes of veterinarians,—they who had studied at the schools only three years, and to whom was given the title of *maréchaux-vétérinaires*; and they who had devoted themselves to studies of a superior kind, who were compelled to remain at the school five years, and who were called *médecins-vétérinaires*.

In 1826 a royal ordinance, and which has been continued to the present day, exacted four years of study from the pupil, and recognized but one title for all veterinary men. Nevertheless, they continued generally in the cavalry to be designated by the term *artistes*, and which has considerably injured the reputation of these officers, by encouraging the ill-founded supposition that the veterinary surgeons of the present day are the same in character and in rank as the “*artistes vétérinaires* of 1795.”

We will now inquire whether, under all these designations, the instruction underwent any change.

Every one knows what the *maîtres maréchaux* once were. They were farriers, the greater part of whom could scarcely read or write. So late as the year 1813, it is well known that, before a student could be admitted, he was examined as to his capability to read and to write *passably*. A certain number, however, of the better class of students, after having obtained the diploma of *maréchal vétérinaire* at Lyons, or at Alfort, were at the end of three years admitted to study two additional years, in order to obtain that of *médecin-vétérinaire*. With the exception of these and a few others, the generality of those who exercised the veterinary art, although, perhaps, a little better acquainted with the medical art than the old *maréchaux-experts*, yet could only be considered as a most illiterate class of men.

If to this we add, that the greater part of these men, when in the exercise of their profession, retained, to a greater or less degree, the gross habits which, from the want of a good education, they had contracted in their youth, it will be readily comprehended that they, on the one hand, were annoyed by the hauteur with which they were regarded by the officers of their corps; and, on the other hand, because in the actual improvement of the veterinary art the government did not think it requisite either to ameliorate their position or to elevate their rank.

The royal ordonnance of 1826 terminated to a considerable degree their state of degradation. It is true, the conditions of their being admitted into the cavalry service were apparently unchanged, but the pupils were compelled to carry to the school a degree of knowledge far superior to that which had been previously required. In fact, two degrees of instruction were created at Alfort by the decree of 1813. The

instruction given to the pupils was now to comprise the various courses which, under the decree of 1813, composed the two classes of instruction. This was effected by henceforth giving to all the pupils that complete medical instruction which, under the ancient regime, was reserved for those selected pupils alone who were admitted to the course of veterinary medicine, and by augmenting the depth and extent of their studies, and requiring of them a degree of intelligence which could only be prepared and developed by far higher previous instruction than had formerly been considered as sufficient. This was highly inconsistent with the assertion in the rules of admission,—that it was quite sufficient to be able to read and write the French language correctly in order to go through courses of instruction taught at our schools with success. The proof that such is not the case is found in the fact that, out of 949 young men admitted into the Alfort school during the fourteen years which followed the putting in force of the ordonnance of 1826 and the uniting of the conditions of capacity required by the prospectus, 532 only, viz. but little more than the half of them, succeeding in passing through their various studies and obtaining a veterinary diploma. Thus, for the last fifteen years, the greater part of the young men who have been intended for the college at Alfort have comprehended the necessity of preparing themselves, either by pursuing a primary course of superior instruction, or by going through the whole, or a portion of their classical studies. For example, the following are the statistics of forty military pupils at present at the school, at least as concerns the studies which they had gone through previously to entering this establishment.

Two are bachelors of arts.

Two have a philosophical certificate.

Five have terminated their rhetoric.

Eight have taken a second or a third degree in the royal colleges.

Seven have taken a fourth degree.

Twelve have gone through special courses of French, mathematics, geography, and history.

Four only possess simply the knowledge absolutely required by the rules of admission.

This is the exact state of things as regards the extent of the first instruction among the pupils of the Alfort school. This explains the obstinate opposition which has been offered to the elevation to rank of military veterinary surgeons, which is founded on these words,—“that it is sufficient to be able to read and write the French language correctly to enable a man to become a veterinary surgeon.”

One word more on medical studies. I assert, and I do not

fear being contradicted by any one; that the same lectures which are delivered at the faculty of medicine are taught at the present time in our veterinary schools. I assert, that the examinations for the granting of diplomas are quite as severe; and, how could it be otherwise? Medicine! Is it not one in its principles and rules? It is only in the different animals on which we practise that any difference occurs. I will ask every honest man where is the difference, in a scientific point of view, between the human and the veterinary surgeon? Is it in the difficulties of the practice? Is it not necessary to have an equal capacity to apply usefully the theoretical knowledge of medicine to the treatment of man and of the quadruped? It is evident, to every unprejudiced person, that all well informed veterinary surgeons have a scientific value almost or quite equal to that of the human surgeon. It is plain that their profession, which was formerly practised by farriers, as that of surgeons was once conducted by barbers, constitutes at the present time a very different thing. The Honourable M. Bertin de Vause, the sole orator who opposed the project of Government at the Chamber of Deputies, did not hesitate to acknowledge this himself from the tribunal.

Our art has not remained and will not remain stationary. The veterinary surgeon, as his skill became developed and he became better known, has gained progressively in the consideration, confidence, and esteem of his fellow citizens. For a very considerable period they have had access to the learned societies found in every department. Many among them occupy distinguished places in the agricultural societies, and in agricultural meetings, and many of them are continuing to receive and to exercise certain honourable missions with reference to agriculture, and commerce, and the arts, in every department throughout the kingdom. Often, likewise, they are summoned to the bench to arbitrate respecting various questions relating to their art, and, generally, the magistrates have had to congratulate themselves on the assistance they have received.

Such facts bear sufficient testimony to the consideration in which veterinary medicine is held at the present day. But what proves still more decidedly the honourable rank that it occupies in the scientific world is, that it was not long before the Royal Institution counted among its members two Professors from the Alfort School (Yvart and Huzard). These were soon increased to five, and then to six, a convincing proof of the increasing regard in which they were held. Two years ago, Barthelémy, a veterinary surgeon, was voted to the Presidency of the Institute by an immense majority of votes.

Lastly, if I may be permitted to add as a last example among many others, and of as much weight—a veterinary commission having been created some years since, several illustrious members of the Institution had solicited and obtained the privilege to be of the number, and they have not considered it as beneath their rank to find themselves associated with veterinary surgeons. They have occupied themselves, without blushing, with works which, to the eyes of certain officers, would appear degrading to many of the officers of the regiment.

This is not all: the well-informed veterinary surgeon is not only respected and honoured, as just stated, in his civil career, but it would be easy for me to shew that, with due zeal and evident good conduct, he will, ere long, find himself advantageously situated, and will probably obtain independence, while often a pension is allowed them in their old age.

Thus, honours, ease, and consideration may be the reward of every practitioner who gives this direction to his studies and his practice.

The perspective is the same in the military and civil career of the man. His position, and the consideration that is granted him, are ensured by the development of his knowledge, and of the increase of his personal value.

Before, and at the time of the foundation of the schools, the management of the horse was practised in regiments by the *master farriers* without any instruction, and not exceeding the rank of quarter-master. At present, when veterinary medicine is making such progress, and accomplishing such revolutions—when long preliminary and peculiar studies are necessary to prove their ability to obtain their diploma at Alfort, veterinary surgeons are still strangely classed with *quarter-masters*. The men of science and of a liberal profession continue to be on an equality with the acting workmen. They rank with the *master tailor*, the *master boot maker*, and the *master saddler* of the regiment. Whatever be their learning, their zeal, their good conduct, and the services which they can render, they always remain *sub-officers*. That is their invariable position. It is their only hope. It is, so far as their regimental prospects go, the only encouragement given them.

The result of this is easily to be foreseen: the moment they imagined that they were above their situation they began to complain—at first to their officers—then to the superior administration—then to the general inspectors—then to the Chambers, who occasionally have listened favourably to their complaints: but, finally, seeing that, notwithstanding the consent of the Chambers, their position did not change, they began to act a

more decided part. They avoid this species of injustice, and many of them end by forsaking their regiments. This can easily be conceived. Having to choose between the civil practice of their profession, which offers them at the same time ease and sure consideration, and that of their regiments, where they find neither one nor the other, and where, besides the absurd regulations degrading them *even in the performance of their professional career*—superiors who are ignorant of their science—veterinary surgeons, who are careless of what becomes of them, do not long hesitate what to do. If they belong to the army they are soon tempted to forsake it. They then begin to do well; or, if they do not belong to it, they avoid engaging themselves, and they do better still. Such is, at this time, the strange embarrassment in the administration of war, that at the same moment that we see the loss of our horses rapidly increasing every day, we also see those abandoning them who are the most capable of lending them an efficacious help for the prevention or the remedy of the evil.

I know very well that, should the state of things which I am now describing remain the same, some zealous and worthy young veterinary surgeons will follow the course that others have done, and attach themselves to the army at some time or other; but in what circumstance, and with what hope or profit?

Some engage themselves with the hope that, by the time they have attained a more mature age, they will have learned the practice of a regiment; others, because they belong to poor families and calculate on being selected as military pupils, and pursue their studies and be kept at the school at the expense of the minister of war. But when the first have attained the age that they waited for, and when the second have finished their studies and accomplished the five years of service that they owed in return to the state, both hasten to quit a career which offers them nothing for the present and nothing for the future. Thus the army, after having been at the expense of their education, and after having suffered from the inevitable errors of their first trials in practice, see themselves abandoned precisely at the moment when, by the experience that they may have acquired, they should have begun to be truly useful, and to repay their country for the shelter and support they have received.

Suppose it to happen, that some laborious and enlightened men, forgetful of their own interests, as there are some among men of science, who have consented to remain in the regiment, and to serve it with zeal, would it not be shameful to class men so devoted and so useful with the workmen of the regiment? Would it not be revolting injustice?

[To be continued.]

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LECTURES ON HORSES.

By WILLIAM PERCIVALL, *M.R.C.S., Veterinary Surgeon,
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THE HAUNCH AND THIGH.

THE divisions of the hind extremity are, the *quarter*, *buttock* or *haunch*, the *thigh*, the *cannon* or *leg*, the *pastern*, the *coronet*, and the *foot* : the joints connecting these parts to each other being, the *hip joint* or *round-bone joint*, the *stifle joint*, the *hock joint*, the *fetlock joint*, the *pastern joint*, the *navicular joint*, and the *coffin joint*.

When we come to examine the skeleton and consider the bones of the hind extremity in reference to the parts denominated "thigh" and "leg" in the living animal, we find the same discrepancy prevailing as was noticed on a former occasion in regard to the fore extremity. The *os femoris*, so named by anatomists, because it corresponds to what, in the human skeleton, is the true thigh-bone—in the quadruped becomes an *os ischii*, or haunch bone ; while the *tibia* and *fibula*—the bones of our leg—appear in the horse as *ossa femoris* or thigh bones. Pursuing this analogical investigation, we discover the *heel* of man to be converted into the *hock* of the horse ; and the bones of the *hands* and *fingers*, by union, consolidation, and great additional length and development, to be made, in four-footed animals, into legs, pasterns, and feet. Man, being the peculiar object of the anatomist's study, the prototype of all his other inquiries, the standard to which all his comparisons are referred, we need feel no surprise that the bones of the parts we are engaged in considering should have received names, according to horsemen's views, so inapplicable to them. To prevent any misunderstanding or mistake, however, we must continue these appellations ; we must still call that bone which, in the living

horse, constitutes part of the haunch, *os femoris*, and that which really forms the thigh, the *tibia*.

The appellations, *quarter*, *buttock*, and *haunch*, appear synonymous : at least it is difficult to say what distinctions they admit of, or to define where one ends and the other begins. Haunch or *hanch* is a French word, used to denote *cette partie du corps ou l'impoita la cuipe* : by us it is often used for buttock and thigh combined. Shakspeare, in his *Henry the Fourth*, has used the word in a sense and with a force of expression peculiar to himself alone :

“ Thou art a summer bird,
Which ever in the *haunch* of winter sings
The lifting up of day.”

When we say a horse has “ fine haunches,” we mean to include his thighs and buttocks : the thigh of the horse indicating the part of the limb extending from the stifle to the hock.

The *OS FEMORIS*, the lower haunch-bone of the quadruped, is similar in its shape and relations to the same bone in the human frame, but is, in a remarkable degree, a *short* bone ; whereas, in man, it is the longest bone in the body, long thighs enabling us to take long steps, affording increased space for muscle, and giving us peculiar advantages on horseback. Long thighs are likewise advantageous for quadrupeds ; but in them, as has been already explained, the *os femoris* constitutes no part of the thigh. Though articulated by means of a ball-and-socket joint with the pelvis above it, and by a condyloid or hinge-formed joint with the *tibia* (the true thigh-bone of the horse) below it, the same as in man, still it is wonderfully short ; at the same time, it is certainly the strongest bone in the body, on account of this shortness being combined with extraordinary development of its shaft and extremities. Had Sampson armed himself with this haunch-bone instead of with the jaw of an ass, he would have found his weapon for combatting the Philistines a greatly more efficient one.

Any disproportionate length of this bone in the horse would have thrown the stifle too low down, out of its natural and proper situation, which is on a level with the inferior line of the body and with the elbow, the joint in the fore extremity to which the stifle corresponds : the only augmentation in length the bone admits of being that which it derives from straightness in the quarters, or the least possible declination in the position of the pelvis. The straight and lengthy quarter, therefore, it is which has—providing the depth of the carcass be undiminished—the greatest length of round bone ; the short and drooping quarter, the least. Here presents itself another instance to shew that, when stride or speed is required,

length is given: a horse with long femoral bones will be enabled in action to throw his hind feet farther forward than another with short ones; that motion in the hip-joint which will advance the short bone as equal to three will project the long one as equal to four.

I said the hip-joint was of the ball-and-socket character, and therefore it possesses, to a greater or less extent, a rotatory motion. Through its means it is that the animal has the power of "tucking his haunches in," or placing his hind foot centrally underneath his body, in the position, of all others, the most effective for the propulsion of the machine in action: unless from the breadth and position of the pelvis, and the connexion with it, and conformation of the hind limbs, he derive this power from the hip joint, from no other joint, from want of the rotatory power, can such action proceed. It is quite a mistake to suppose that such "tucking in" can be produced by the hocks, they admitting but of simple flexion and extension. Both the fore and hind extremities derive what faculty of lateral and rotatory motion they possess—the power of throwing the legs, and turning the toes inward or outward in action—from ball-and-socket joints: the fore extremity from the shoulder joint, the hind extremity from the hip joint. There is this important difference, however, in the construction of these correspondent articulations: the os humeri is placed beneath the scapula, in such a situation that the weight of the body comes directly upon its head; whereas, in consequence of the head or articulatory part of the os femoris, instead of forming the top of the bone, being laterally placed at a right angle to the shaft of the bone, the weight is transmitted, not directly upon the os femoris, but in an oblique or indirect line. One reason for this appears evident, in the different relations to the body existing between the shoulder and hip joints, the latter being in immediate connexion with the body itself, the former attached only through the intervention of muscle. The lateral position of the hip joint serves, in a measure, to compensate for the want of that elasticity and spring which the shoulder derives from its muscular attachments, to counteract or mitigate any shock or concussion the limb may sustain in action, such as from jumping, &c. There is another and a greater advantage, however, resulting from this position of obliquity. At the time that the weight of the body is pressing with its greatest force upon the hip joints, from the pressure being sideways instead of perpendicular, their motions under the weight are, comparatively, easily carried on—the work of progression is saved that hinderance and difficulty which would have attended the direct imposition of weight upon these joints, to say nothing about the friction and wear from concussion, the joints themselves must

necessarily have sustained. A third reason for placing the head of the os femoris in an angular position, and setting it off from the shaft or body of the bone by means of a *neck*—for so the intervening portion of bone is called—is, that the joints might possess an enlarged sphere of motion. In the fore extremity, the scapula itself being a moveable bone, the humerus did not require this; but in the hind, the pelvis being a fixture to the trunk, it was necessary to confer as much mobility upon the hip joint as was compatible with the strength required in it, to carry the weight of the body, and to guard against any risk of dislocation. Had anything like the force resulting from weight and action been in operation in the fore extremity the same as in the hind, the shoulder joint could never have admitted of the loose and superficial construction it at present, for the sake of motion, enjoys. It must have been furnished with the deep socket, and complete reception of the ball into it, which we observe in the articulation now under our consideration.

A beautiful contrivance, however, in defence of dislocation, whether it be likely to happen from the extensive motion enjoyed by the hip joint, or from the resistance it opposes to the force of the weight and shocks it receives, is the *round ligament*, as it has been named; a ligament or round cord, characteristically short and strong, one end of which is affixed to the centre of the spherical head of the os femoris, while its other end is rooted into the floor of the socket in which that head plays: thus in nowise interfering with the revolutions and turnings of the ball within its socket—in nowise limiting or abridging the movements of the hind limb, and yet most effectually, in all those varied movements, preserving the hip joint from dislocation. By the depth of the *acetabulum*, for so the socket in the pelvis is called—which in the recent subject is still further deepened by an edging of cartilage or gristle, whose flexibility admits of all the required latitude of motion; by the round ligament; and by the thick and powerful muscles by which it is on every side invested—is the hip joint preserved from displacement: indeed, without rupture or laceration of the round ligament it is impossible for dislocation to take place.

Another remarkable feature in the os femoris is the huge ill-shapen projection proceeding from its upper and posterior part, which has got the name of *greater trochanter*, by way of distinguishing it from a process much less in magnitude arising from the body of the bone. This protuberant portion of bone may be regarded in the light of an elbow, or a hock, or any other projection whose use is to serve as a lever of the most favourable description, compatible with the situation it is in and to the muscles attached to it. Into the great trochanter are inserted those

powerful muscles which extend the haunches after they have been flexed and advanced underneath the body, and in this act of extension propel the machine forward: no wonder, therefore, that they should have been constructed, in respect to magnitude and position, in a manner to offer the greatest possible leverage. When we see the quarters straight and lengthy, and the stifles prominent and jutting well forwards, we may take it for granted that the trochanters partake of the increased length of the femoral bones: the reverse of this—short quarters and drooping or rounded stifles—shewing that the femoral bones are short, and their trochanters likewise.

THE ANCIENT HISTORY OF THE OX.

By Mr. W. F. KARKEEK, V.S., Truro.

[Continued from p. 42.]

IN our last paper we endeavoured to prove that the common received opinions respecting the original breed of our island being similar to the white wild cattle—the *Bos Scoticus* of some authors—was an erroneous one. It is our intention to pursue this argument in the present paper.

If we might be allowed to draw any conclusions respecting the colour of the aboriginal breed from the prevailing colour by which our cattle are characterized at the present time, we should say that black was more likely to have been the distinguishing character of the breed.

The black breed prevailed in Cornwall about a century since, and was gradually superseded by the introduction of the red Devon kind. The cross of the black cow with the red bull sometimes produced a brindled progeny, and animals of this description are now frequently found in the west of the county; but, generally speaking, the N. Devons, with the exception of a few short-horns, prevails everywhere here, although the black muzzle will sometimes peep forth in spite of the blood of the sire.

Throughout Wales, again, the black breed generally prevail; and in the west and north islands of Scotland, where they seemed to have retained their aboriginal characters, black is also the distinguishing colour.

In Ireland, also, the aboriginal breed are either black or brindled, with moderate length of horn; and it is only where they have been crossed with other breeds that white faces and long horns make their appearance.

We have already alluded to the historical fact, that the aboriginal inhabitants of Britain were, in early times, frequently overawed by ferocious invaders, who carried ruin and destruction wherever they went; and that, in the retreat of the natives, they naturally took with them some portion of the wreck of their property, which consisted chiefly of cattle, which they drove along with them to the mountainous districts of Cornwall, Devonshire, Wales, and Scotland, and that it was in this manner that the native breed were preserved.

A Devonshire breeder of N. Devon cattle will tell you that their red breed has existed the same from time immemorial, but we have our doubts of this. Polwhele, in his History of Devon, tells us that a small breed of black cattle were formerly found on the moors between Hatherleigh and Holsworthy, and also in the neighbourhood of Honiton; and, at the present time, the black muzzle will shew itself even in the improved breed of North Devons, notwithstanding the care and attention that is paid in the breeding of them. Thus, in despite of all their care in breeding from none but the *blood-red kind*, as *indicating the purity of the breed*, still it carries in its blood some taint of the aboriginal race.

The finest of the Devon breed shew white marks on the udder, and white running three or four inches along the belly. In the south of Devon, where the breeders are not so careful in selecting for the purpose of breeding, the cattle are of a lighter colour, approaching to a chestnut red, with marks of white plentifully dispersed. Alterations of climate may have had some influence in this, the south of Devon being particularly mild, and the herbage far more luxuriant: the consequences of which are, that they attain to a larger size. These bear, in some respects, a resemblance to some French cattle which we have seen; and there is some ground for believing, that even the North Devon kind owe their colour and other excellences to a foreign stock.

Some of the most eminent antiquarians are of opinion that the *Dianmonii*—the earliest inhabitants of Devon and Cornwall—were the Belgic invaders. Cæsar tells us that when he landed in Britain he found the Belgæ inhabiting the sea coasts extending from Suffolk to Devonshire. History gives us no information as to whether they brought any of their cattle with them; but we should consider it highly probable that they did; and if so, we can easily account for the red colour of the Devon breed. The Sussex ox is of a deep chestnut red, with white hair occasionally mixed: this is considered also as a stain in the breed; the original colour of the breed was, without doubt, bordering on the yellow red and speckled with white, similar to the German and

French breed. The Norman breed are light red, generally spotted with white; and some are yellow or dun: this breed gives the character to all the breed of the north of France.

The differences in the colour of our cattle cannot easily be explained in any other way than this:—fancy or judgment has had a great deal to do in fixing those particular colours, marks, or figures, as indicating some particular character or excellence in those different breeds, just in the same manner as the hornless breed of Galloway, the polled Angus breed in Scotland, and the Suffolk polls in England have been preserved and established.

With regard to the influence of climate in producing the different varieties in colour, it would appear that cattle in this instance differ from many other animals. It is found almost as a general rule, that light colours prevail among animals of the polar regions, and a swarthy and dusky hue under the tropics and equator. The arctic fox, the polar bear, and the snow bunting are striking examples of this; but with regard to cattle it is quite the reverse, since in the coldest climates black cattle are found to prevail, and in the warm latitudes they are generally of a light-red or cream-coloured variety. The prevailing colour of Spain, of France, and in the neighbouring islands of Guernsey and Jersey, are either light-red or cream-coloured, with white marks interspersed. Whilst in the north of Scotland, the Hebrides, and the Orkneys, the cattle are generally black.

It sometimes happens that the West Highland black cattle produce a white or cream-coloured progeny, with reddish ears and muzzles, approaching so closely to the wild white race that they might be mistaken for them. This is the consequence of the white race having formerly mixed with the aboriginal black breed, and the white colour is produced on the principle which we have just alluded to, termed by breeders, *breeding back*. The white colour in the *short horns* was obtained in a similar way; and whenever this colour shews itself, it is accompanied more or less with a red tinge on the extremity of the ear, a distinctive character of the white wild race. Again, alluding to the effect of climate on the colour of cattle, the breeds of the Kisguise and Calmuck Tartars, and those of Podolia and Ukraine, that are considered the largest breed of any, and are distinguished by ample horns spreading sideways, then forwards and upwards, with dark points,—their colour is a blueish ash, passing to black, and many are perfectly black, while in Abyssinia, and in North and Central Africa, the cattle are nearly white, and of a large size. But the rule is by no means constant, although there is ample evidence adduced to prove our position: the fact is, the different breeds of cattle have been mingled together in almost

every country, and it is only within the last century that any attention has been directed to preserve them in their native districts. In our own country we find a variety in almost every county, the consequence partly of crossing with foreign varieties, and the colour of these different breeds is now regarded as an important distinction in their different localities, as being, in fact, the characteristic attribute of the various races.

Thus the old Hereford breed of cattle were chiefly *brown* or *red*, like the North Devons, and were probably descended from the same race. It is not more than half a century since the *white faces* have been introduced. About the year 1796, Mr. Benjamin Tonking, on his marriage with his master's daughter, became possessor of two cows that shewed an extraordinary tendency to fatten. The one, having a plenty of white marks, he called *Pigeon*; the other, of a rich red colour, with a spotted face, he called *Mottle*; and it is a remarkable fact, that the markings of those two cows may be distinguished in their descendants at the present day.

In the early stage of his improvements he made use of the best bulls he could obtain in his own neighbourhood; but afterwards he confined himself in breeding to his own stock. It thus appears, that the principles of his system were the selection of the most valuable individuals for breeding, and that, having produced by these means animals of the properties required, he confined himself to his own herd, and then, by intermixture one with another, he obtained that uniformity of character which constitutes a breed. Since this period Herefordshire has been a breeding country, and may well boast of possessing one of the finest breeds in Britain.

The peculiar colour of this breed has been supposed by some to be owing to peculiarity of soil—the old red sandstone; but the soil has nothing to do with the colour of the hair, although it has principally to do with size and quality. The polled Angus breed, of a black colour, are situated on the old red sandstone which forms the plains and less elevated parts of Forfar and Kincardine. And again, the Galloway breed, which are also black and polled animals, and by some persons supposed to be of the same origin as the Angus, are situated on the Greywacke hills, which stretch from St. Abb's Head, on the east coast, to the North Irish Channel. We have also another example in the Devon and Sussex breeds, both approximating in colour and other qualities; yet the former inhabiting a soil in the Greywacke series, and the latter residing on the *wealden*, a formation that has acquired much celebrity on account of the organic remains found there.

The conclusion to which we arrive on the argument before us is, that in the black cattle of Scotland, of Ireland, and North and South Wales, we have the genuine unmixed descendants of the aboriginal race, and that the different breeds now prevailing, with various degrees of celebrity, have derived their several peculiarities of colour from accidental circumstances and the influence of crosses introduced from other countries. We shall consider the influence which those crosses have had in effecting particular characters in different breeds in our next paper.

A CASE OF VOMITION IN A COW,

WHICH LASTED SIX WEEKS ; CAUSED BY A DILATATION OF THE ŒSOPHAGUS AT ITS INFERIOR EXTREMITY, AND TERMINATING FATALLY.

By Mr. R. READ, V.S., Crediton.

MR. BROCK, of Westwood Farm, consulted me respecting a cow, about the middle of February last, that had vomited her food during the previous three weeks, in a greater or smaller quantity. He had himself, before he solicited my advice, administered oil and other laxative medicines, but to no good purpose. The animal had a constant craving for food : she, however, seemed lively. The fæces were natural, but small in quantity. The chief symptoms were, that, after a little food had been swallowed, either esculent or herbivorous, an uneasiness, with moaning, followed, attended by a spasmodic action of the gullet ; and then all was again ejected by vomition. She would afterwards return to eating, but the same result occurred. Sometimes the food would remain down for three or four hours, but the least irritation about the pharynx excited vomiting. Even in the administering of medicine or gruel the first two or three hornsful were always rejected. In order to ascertain the state of the œsophagus I had the probang introduced. As soon as it reached the upper part of the gullet, vomiting came on, and was repeatedly so before the tube could be introduced ; but as soon as the pouch was emptied, the probang easily passed on into the stomach.

Mr. Brock, with a truly liberal spirit, gave up the cow to me to pursue what course I pleased with her. It being a case of interest, and not quite a mile from the town, Messrs. Jones and Vicary, my students, administered every thing to her. Half a drachm of Prussic acid was given twice a day, in a pint of cold

water, first pouring down a little water in order to excite vomiting, and empty the sac. This was continued four or five days to no purpose.

Morphine and camphor were then exhibited, and continued several days with the same result.

Creasote was then given, with occasional doses of oleaginous purgatives; but no success or amendment followed. The diet consisted of bland fluids, as a decoction of linseed, and other farinaceous food, with a small quantity of grass. No compact food was latterly allowed, from its creating more pain in its ejection. This state of things, with alternate vomiting and feeding, continued until the first of March, when she was slaughtered as an act of humanity, and to prevent a more lingering and painful death from starvation.

Autopsy.—One hour after death unfolded the mystery, and substantiated the diagnosis I had entertained—that the injury or cause was in the œsophagean canal. The gullet, at its inferior part, near to its termination into the cud duct, was enormously distended. It was an ovoid sacculation, about one and a half feet in length, eighteen inches in circumference, and with a gradual tapering at either extremity. It held also, by admeasurement, about six pints of water, and contained five pounds of imperfectly masticated food. Some part of the cyst was nearly pellucid, from being thinned by over-distention. None of the muscular fibres were ruptured. Two or three longitudinal abrasions of the cuticular coat of the œsophagus existed; but they seemed to be the result of the repeated vomiting, there being a loss of substance, and not a splitting of the membrane. From the entrance or commencement of the œsophagean canal not being of so dilatable a material as the œsophagus, the sacculation in its inferior extremity was rugose, or puckered, which, in a great measure, acted as a barrier to the food falling into the œsophagean canal from the effect of gravitation, although some part must have done so, as no assistance could be derived from that part of the throat that was sacculated.

In the *rumen* was found nearly two pecks and a half of pellets, varying in weight from one to three ounces. In form they were ovoid or globular, and somewhat flattened, and occupied the bottom of the rumen. The food that was not moulded was in the upper part, and near to the œsophagean canal.

In breaking down the pellet, it seemed very similar to ægagrophili, or hair balls. I am inclined to think this shews the semi-revoluble power of the rumen in forming the pellet for rumination.

On mixing a pellet in water, it formed a pultaceous mass, and

consisted chiefly of mucus. In point of fact, the globule is entirely held together by the mucous secretion of the rumen.

Although the animal had drunk a little while before it was slaughtered, no fluid in any quantity existed in the paunch.

Nothing can more favour the formation of the pellet than the mucus secreted by the spiculated tunic of the rumen, in conjunction with its semi-revolving action.

The omasum.—The contents of this viscus consisted of food in a more fluid state ; but not a single pellet was found there.

Now, if the pellet of rumination is formed in the second stomach, how is it that no globules were perceptible ? Besides, according to the opinion of some, the second stomach is for the reception of water ; but water mixed with the ingesta would not be of sufficient tenacity to mat the pellets together, mucus being necessarily required to make the particles of heterogeneous food adhere in a mass. The food in the rumen was loaded with mucus, and that in the omasum was watery and thin. The quantity of pellets in the rumen may be thus explained : the globule, not being able to be ejected by the œsophagean canal through the œsophagus, fell back again into the rumen or first stomach.

The maniplus, or third stomach, was empty ; its leaves were in contact, but moist from its normal secretions. Its papillæ were visible and erect.

The abomasum, contained a verdurous fluid and seemed healthy. The intestines were empty, except the rectum, which contained a small quantity of fæces. I have detailed this case as minutely as possible through the medium of THE VETERINARIAN. If, instead of many of our professional brethren recording their cases in their private manuscripts, they would suffer them to appear in type, they would repay our standard work for its candour, its fairness, and its diffusion of right and honourable principles.

ON THE IDENTITY OF RED-WATER AND SERUM.

By Mr. R. READ, Crediton.

HAVING in the January number of THE VETERINARIAN asserted an opinion that the bloody water in cattle was constituted partly of serum, and its colour modified by an excess or want of cruor, in a chemical combination with the urine, the following experiments are detailed as presenting similar results :—

Experiment I.—One fluid ounce of red-water being caught from a cow, and to which nitric acid was added, an effervescence ensued ; but only a cloudy deposit took place, from the action of the acid being destroyed by the carbonate of ammonia, forming the nitrate of that alkali.

On placing it in a vessel of boiling water for some time, the ammonia became volatilized ; the albumen began to be deposited ; the liquid first became milky, and to this a curdy deposit followed. Nitric acid, again applied, caused a farther deposit of albumen, all the ammonia being got rid of by the heat.

Experiment II.—One fluid ounce of red-water being placed in a vessel of boiling water from fifteen minutes to half an hour, the fluid becomes turbid. Being taken from the fire, and allowed to cool, and nitric acid dropped into it, there is a coagulation, or rather, the serum containing the albumen immediately does so, but with only a very slight effervescence. This arises from its forming a new compound with a portion of uncombined soda, for which it has an affinity.

Experiment III.—Mix together two equivalents of the serum of the blood and cow's urine. The coagulation that results will be the same as that caught from the cow. Half an ounce of serum mixed with the same quantity of cow's urine effervesces when nitric acid is poured into it. If the ammonia is again volatilized by the heat of boiling water, and the acid added, a deposit of flaky coagula immediately ensues.

Experiment IV.—Half an ounce of serum and half an ounce of cow's urine being mixed in a bottle, in a vessel of water, and kept boiling from fifteen to thirty minutes, the fluid becomes milky. If it is then taken off the fire and allowed to cool, and a little nitric acid is dropped in, it directly curdles, as in the first and second experiment with true red-water.

Experiment V.—Two ounces of red-water being placed in the light in a corked phial, remained, after two months, pellucid and undecomposed, its colour neither diminished nor increased ; but it seemed to have acquired a more ammoniacal smell.

Experiment VI.—One ounce of coagulable fibrine of the blood mixed with one ounce of cow's urine, and exposed to the light in a phial, soon decomposed, and became septic and foul, with an exhalation of an intolerable odour.

In making the experiment with the real and artificial red water, the acid only imperfectly threw down the albumen, until the ammonia was volatilized.

I find, in performing these experiments, that the best plan is first of all to add the acid to either the true or imitative red-water, in order to form chemical affinities with any uncombined

soda, potash, or ammonia; then to place the fluid in a water bath, and boil it some time, and afterwards to let it cool, and add again the acid. The albumen is thus readily precipitated; but if we still continue to boil the water in which the phial containing the fluid is placed, we shall this way also obtain a coagulum, but not with the same intensity as with the nitric acid, as before directed. The various modifications in the colour of red-water are dependent on the absence or presence in quantity of colouring matter being derived from the red globules of the blood, the oxide of iron, which is held in solution chemically by the serum.

Experiment the fifth and sixth shew, that if the coagulable portion of the blood passed off by the kidneys, it would quickly decompose. Red-water, as the fifth experiment proves, does not become turbid or part with its character after two months' exposure to solar light; whilst the cruor of the blood mixed with cow's urine soon underwent the process of putrefaction and decomposition.

In the red-water that occurs under common causes, I have rarely seen any fibrine deposited; and if such were deposited, it could not be albumen, as that requires 160 degrees of heat, which can never take place in the animal body. If the urine was fibrinous in the same ratio in which it is serous, we should have a spontaneous coagulable deposit, several cases of which I have witnessed in the human subject, and, as in the sixth experiment, decomposition would soon ensue in the presence of light.

In the red-water arising from mechanical injury, where the vessels of the kidneys are ruptured, coagulable lymph is found, either deposited in the urine, or frequently hanging in shreds from the vagina.

These experiments I have made in order to shew a corresponding result by the application of the usual tests to prove the existence of albumen, whether applied to the urine of red water idiopathically produced, or to that artificially made by adding serum to cows' urine. If an excess of acid is added in any of the experiments from the first to the fourth, and the fluid is well agitated, the curdy deposit is transformed into a pulverulent matter, losing its albuminous tenacity.

In my next communication I intend to test the alvine discharge. My opinion is, that the acute diarrhœa which frequently attends this disorder in the primary stage is chiefly serum, mixed with a little crassamentum and fœcal matter.

[To be continued.]

A CASE OF INDURATION OF THE THYROID GLAND IN A COW, AND OF DROPPING AFTER CALVING.

By Mr. J. MACLEAN, V.S., Jedburgh.

AN essay on tumours about the head and throat of cattle, by Mr. Relph, V.S., of Sebergham, in your number for this month, recalls to my mind the history of a case that may not prove uninteresting to your practical readers.

The animal was a two-year-old short-horned bullock that had been purchased at a roup of farm stock for half its value, on account of an enormous swelling, with considerable discharge, that existed at the throat. His new owner was an extensive employer of mine, and called me in to explain the nature of the disease to him, and to determine whether it could be removed.

I examined the parts, and informed him that there was induration of the thyroid gland—that the enlargement could not be diminished, but must be removed by an operation.

“But,” says he, “is there no danger attending it?” I replied that there was, from its being in the neighbourhood of some large bloodvessels or nerves. “Well,” he says, “you must do as you think proper with it.”

I obtained the assistance of some of the men, and had the ox fastened to the stake, and proceeded to operate by making an incision lengthwise, and avoiding the jugular vein. The owner stood anxiously watching our proceedings until the animal heaved some violent throes, when he left us to ourselves. I introduced my two fore-fingers and removed every obstruction between them and the gland, which was far too large to be taken out whole. I broke it down, and got it away piecemeal. I then inserted a large seton, which I brought out at the lower part of the throat, so as to make a dependent orifice for the matter.

The seton was kept in for three weeks; it was then taken out, and the parts healed up in four months. The animal was afterwards sold for twice the sum at which he was bought, being fully as valuable as any other beast of the same age.

There has been much dispute as to the propriety of giving stimulants to cows affected with dropping after calving. I must say, for my part, that I have found the administration of them attended by a most beneficial effect. I have attended a great many cases in and around this district, and I think that I have not lost more than five. Most of these were complicated with

other diseases, such as clyers or phthisis pulmonalis, dropsy, disease of the heart.

In one case, where the owner, at the suggestion of some old wives and a cow-doctor, had given 4 lbs. of Epsom salts in doses of a pound at a time, a bottle of castor oil, and a bottle of whale oil, and all without moving the bowels, they called me in, and, without confessing what they had been giving, I administered at one dose 2 lbs. more of the salts, and 40 drops of croton oil in each pound, and all this without effect. The cow had been now down for a week without shewing any symptoms of rising, and was evidently sinking fast. I then had recourse to Mr. Bracy Clark's tincture of pimento with whisky, administered every two hours; and after she had taken a bottle and a half of whisky and eight ounces of the pimento, and all in thirty-six hours, she got upon her legs, and continued standing for several days. The whisky was continued at intervals, so as not to permit extreme depression from taking place, which was sadly threatened. The only apparent consequence of all the physic was that the dung was a little more pultaceous on the third day after her getting up.

A curious feature in this case, and which seemed to favour the opinion of those who contend that this affection is a disease of the nervous system, is the fact that the cow lost all power over one of her hind legs, which she trailed after her for upwards of two months.

SINGULAR DESQUAMATION OF THE SKIN OF A HOG.

Communicated by Mr. J. SHERWOOD, V.S., Sittingbourne.

THE subject of our story is a hog, at the Abbey-farm, Faversham, the property of Charles Hilton, Esq. A few weeks ago the skin became hard on each side, about nine or ten inches from the spine; it has since kept gradually separating towards the centre of the spine from the shoulder to the insertion of the tail. The bailiff has cut off portions from time to time of the weight of nearly ten pounds, in order to make the load with which the animal was encumbered the lighter; until the last week, when the hog lay down, and, after taking his rest with his brethren (for he fed and looked as well as the rest, with the exception of the load on his back), he got up and left the substance behind him. It consisted of the entire skin, as far as it had sloughed, with about two inches of adeps adhering to it in the middle, getting gradually thinner towards the sides, and weigh-

ing twenty pounds; which, added to the portions before removed, make a total of thirty pounds. The hog is now computed to weigh twenty score. He had not any medicine administered, as he did well the whole of the time.

[Will some of our contributors throw a little light on this singular disease of the skin of the hog? It is not of frequent occurrence, but it deserves more attention than has been paid to it.—EDITORS.]

ON RODWAY'S PATENT SHOE.

By Mr. W. REDDALL, V.S.

Messrs. Editors,—IT is with mingled feelings of disappointment and regret that I feel called on, by a sense of justice, to give publicity to my practical opinion, through the medium of your valuable periodical, relative to Rodway's Patent Horseshoes. I did hope, from the principle of the shoe, and from the very flattering description given of it in the Circular issued by the patentee, that it would, in some measure, have been practically borne out, and that thus the foot of the generous horse would have become relieved of, at least, some of the evils which the patentee professed to cure by it; but after having given the shoes a fair trial—having used them in my forge for the space of from four to five months (during which time I have put on a great number of the patent shoes, many on horses of my own, ridden by myself, as well as on coach horses, hunters, cart-horses, and ponies), I am compelled to say that not one of the presumed benefits which were held out so sanguinely by Mr. Rodway became verified in practice; but I have found that those very evils which the Patentee so speciously professes to obviate by the use of his shoes have been incurred by those even of his own manufacture. I have seen corns produced in strong sound feet by the use of a single set of Mr. Rodway's shoes, and have found them more insecure on the foot than the common shoes; the nails frequently breaking in the neck, just as they emerge from the hoof, between the shoe and crust. This, I think, is to be explained by the fact of there being only two narrow points of contact between the shoe and the ground, which are the two ridges, and which, of course, receive an equal degree of pressure. The inner rim being at a distance from the nails and clinches, the

leverage in consequence becomes so great that the nails break in the manner I have before described. Having thus, Sir, candidly and fairly given you my opinion of the shoe, I trust the patentee will not accuse me of possessing hostile feelings towards him or his patent. I can assure him it is not by such feelings that I am actuated in thus publicly giving my opinion. The same impression, namely the love of candour and justice, that led me to take out the license for the use of the shoes, has since induced me to beat up the stock of the patent shoes and patent iron that I had by me, and convert it into the old kind of shoe, attached to the foot by the three-quarter mode of nailing. Having thus briefly described some of the leading failures attendant on the use of the patent shoe,—and expense and a want of durability, by the by, are important features not to be lost sight of,—

I remain, &c.

MR. RODWAY IN DEFENCE OF HIS PATENT SHOE.

I BEG to tender you my thanks for the insertion of a letter in your Number of December last, in part replying to one which appeared to criticise my patent horseshoe (or rather my prospectus) in the preceding Number. Though the remarks have appeared as editorial, I cannot for a moment admit them to be so without doing gross injustice to each of you*; feeling assured, from the unprofessional, contradictory, undecided, and unmanly character of the article in November, and also the present month, they could not have emanated from a veterinarian: and I flatter myself the perusal of my remarks upon them will prove to each of your readers the necessity that a man pretending to so much and knowing so little on a subject so important should sail no longer under false colours, to lower the profession in public estimation. But I begin strongly to feel that the desire to tell strange tales and convey strange impressions to my injury comes from a more ignoble failing than ignorance. I might be called upon to speak warmly upon the subject but for the many important truths he is compelled to tell in my favour. Professor Coleman did much for the veterinary art, studied hard to do much more, and was deservedly respected; need I, then, be surprised at being attacked by misrepresentations, misquotations, and unfairness, while such a man's ashes are dragged from his tomb, and his very good intentions held up in paltry borrowed satire, as in No-

* Mr. Rodway was told by Mr. Youatt, at the latter's house—and he cannot deny it—that the “review” of his shoe was to be *editorial*.

vember last, to public ridicule? I fear not to be condemned by such a writer. I will first answer a few assertions in the November number, where the writer states my shoe does not give the hold or grasp upon the ground I described, because there is no such concavity in the horse's foot as in my shoe, and that there are shoes (he evidently prefers) which "resemble, as near as shoes can do, Nature's tread itself." The ground surface of the horse's foot may certainly, as he most *curiously* describes it, resemble "a sort of inverted oyster-shell." Why did he not also ask if there is such a broad, flat, polished surface, as the common shoe, sometimes with or without calkins two inches long, to be found in the natural foot? or, why does he not explain, if we are to copy the natural form of the foot (which, of course, must be by forming an iron shoe the fac-simile of the "oyster-shell"), how many horses could wear such a shoe one day without being lame? That would be a rather inconvenient "Nature's tread itself." Will he not allow that if by art, for certain purposes, we are called upon to violate natural principles, we are justified also to provide by art a remedy? Not to name the criticism on frog-pressure (contrary to Coleman and most other veterinarians of talent), I would simply state, the part which "bangs Banagher" is the unwarranted misquotation of my prospectus. Will the writer *again* tell me I have ever stated in that prospectus that "frog-pressure will give double work, disease to the animals, and death to the rider"? Or does he not know my statements were the very reverse? The quotation from the "worthy Baronet" savours much like using him as a cat's-paw. Pray, who, till now, ever heard of a concave surface, open at both ends, causing suction? My shoe also, we were informed, could not be "steeled afresh." Allow me to ask if he has now found that it can? and if he ought not to have known that at the time?

I come now to the article in this month's number of THE VETERINARIAN. The writer may well speak of shelves and museums; if, indeed, a man of talent he can be, such, most assuredly, must have been his abode for the last nine months—or can it be possible he could have known the shoe that length of time, had every opportunity of testing it in his own forge (if forge he has), properly or improperly made or applied, good or bad material used—that he could have written a very long criticism in November last, saying most involuntarily more in favour than against my shoe; and only now informs us he has had "time and opportunity to give the shoe a trial"? Let me ask thinking men, what can be more in its favour than for a man (who, perhaps, wishes to be considered talented) to have such opportunities, such dispositions, and to be able to say so

little against it, and that little so easily contradicted? What would a tradesman be thought of, at what be rated his judgment, if, in one single simple article of which he was justly expected to have a perfect knowledge, he required eight or nine months to give his opinion whether it was better or worse than an old article of different structure for the same purpose? What would be the state of trade in such hands? Assuredly there would be a lamentable check to improvement, if the public are to be subject to the influence of such obtuse intellects.

From the knowledge the writer wishes to display upon the subject, I feel assured I may ask him to keep a little nearer a fair and proper description of my shoe when he volunteers it. "Mr. Rodway's patented horseshoe differs from the shoe in ordinary use only in having a wide, deep excavation, groove, or concavity, upon its ground surface—a sort of extension or dilatation of the fullering of the common shoe from the outer to the inner border of the web." Pray, allow me to ask, after all this, how much of a shoe would be left? None, of course! The writer would groove the whole substance away, and wish the public to believe the *nothing* remaining to be my shoe! These are sweeping measures, and will easily account for want of durability in one forge, and abundance of it in another. What is more simple or more clearly understood than that difference of form may often supply the want of substance? Though the writer must and does admit the advantage of lightness in my shoe, he appears anxious not to take into consideration that it is on the principle of an arch, the strongest form to be obtained, and that more than sufficient durability would be no recommendation. By the same rule, he might argue that the Greenwich railway would be more secure by having the arches upon which it is constructed built up and made solid; the wheels of railway carriages solid also. Though the desire to have solid and heavy shoes for horses may be strong in some persons, I apprehend the same individuals would little like to exchange their own leather for wooden ones; we are, therefore, justified in dispensing (if required) with superabundant solidity for beneficial purposes.

Experience, however, has told that, with ordinary care, the patent concave shoe is made to answer every purpose, and will wear quite as long as is desirable, either for the horse or his owner. But in this, as in any other shoe, the best workman will produce the best article. The writer admits that, even if the patent shoes did not last so long as the common, there is a remedy by the patent being attended with much less cost. It might doubtless appear, at first sight, that, presenting two rims to the ground as a bearing surface, they would wear away sooner than the broad,

flat surface, which may receive also more manipulation ; but any one seeking only for the fact will find every objection yet made, with the appearance of truth, has been indifferent material, so easily improved and already done. The reduced amount of frictions also, to which the shoe is exposed, is a powerful agent in giving durability ; for the writer must admit the destroyer of the common shoe is friction, and the more that is avoided the more durability is gained. Will he again tell horse proprietors that veterinary surgeons attend so little (though so important) to the forge, as not to have the will or power of having a shoe manufactured to their own wish, or even hardened ? I might say much upon this subject, but will only ask if the inference drawn from this may not cause the owners of valuable horses to ask themselves the question, if, in other forges also such orders cannot be obeyed, of what avail is an order to spare the knife, the but-teris, the hammer, the nail, or the stick ? Is this the admission of the proprietor of a shoeing establishment, attending to his duty as a master ? My shoe, says the writer, will “ bend :” if properly made it cannot, if badly made it may, and so may any other ; will “ get down upon the sole of the foot :” of course, he means by the weight of the horse upon it. Is not the sole, then, above the shoe ? Allow me to inquire (if such a circumstance should occur with mine or any other shoe) how the shoe can get down to a surface above it ? or does the writer mean it will “ get down ” to some foot at our antipodes ? It is also said my shoe is “ incapable of resisting the expansive action of the crust.” Supposing the workman (for this, as most of his objections, is a point of workmanship, not principle) chose it to be so, according to the unilateral principle this would be an important advantage. Some of my shoes, he also asserts, have broken—a possible case certainly ; but permit me to learn from him if in every forge in the kingdom (except his) the common shoe is not to be found broken, bent, and nail-holes bilged ? Allow me also to learn his real motive for persisting in misrepresenting my shoe as well as prospectus. If he really thinks the nails are to be passed through the middle of the web, which certainly is the thinnest part, in addition to his many extraordinary opinions, this will, I feel assured, account for my shoe having received no equitable trial under his care. In the proper place for the nails will be found sufficient strength to receive and retain them. I might with the same degree of justice hold up for condemnation the common shoe, because I thought proper to drive all the nails through the points of the heels. The author admits in my shoe the nails only *occasionally* receive blows and friction, which in the common one they are always receiving ; and therefore the frequent complaints of starting of clinches, moving

on the foot, becoming loose, nails lost, and breaking or losing altogether of the ordinary shoe. He asserts also, that horses have been seen to slip on stone or wood with my shoes "much as others did in ordinary shoes." I feel greatly indebted to him that they have not been seen to slip much more than others: did he however (wishing only for truth), ascertain the condition the shoes were in at the time? Because my shoe is a patented one, I have frequently found persons expecting it to perform almost miracles. It is expected by such persons never to wear out, or, at three weeks' end, if almost worn as flat as a new common shoe, it is nevertheless expected to be in full operation. The more it is worn, of course, the more it approximates to the common one, and therefore the less it will prevent slipping. But while he admitted that on roads and turf in truth it would take a hold which a plane surface could not, did he not have the generosity that was an ornament to him in November last, and give again the testimony of so respectable and honest a practitioner as Mr. Henderson, veterinary surgeon to her Majesty the Queen Dowager, who fully established this fact, and has since then, for the good of horse proprietors, allowed me to use his name as being prepared by long experience to bear witness to the facts referred to? Gratifying must it be to all who have approved of the concave shoe to see that, to the present moment, not one error of principle has been discovered, but that attempts of disapprobation have either in reality been objections to the material, inferior workmanship under their own superintendence, or absolute ignorance of the subject: to reply to empty and frivolous assertions would be useless, though perhaps amusing.

The adoption of even the slightest improvement in the horse-shoe is important to the public generally. If such an improvement does not exist in the concave shoe, let it be known. I feared from the first no open and public inquiry; but now facts and absolute experience plead my cause. When my shoe and its many advantages to the trade are fully known, I feel assured every maker of horseshoes will see clearly his decided interest is to adopt it. The saving in expense has been partly told for me in November last; but there are advantages in the use of this shoe infinitely more important to the trade than even its superiority over the common one, or its great economy: these I am aware are not known to the writer to whom I reply, and were not intended by me to be made public, being entirely matter of business, and concerning only the makers of horseshoes. I have studiously avoided doing injury in any way to the trade; every thing I have published upon the subject has borne my name—the only system

to be followed by a man having confidence in his subject. Mere anonymous assertions, without evidence, publish their own value ; but assertions and opinions such as I have replied to are so weak, so unprofessional, and display such utter ignorance, that I beg the author, in common honesty and defence of the reputation of veterinarians, to make known his name ; and if, at the same time, he would furnish his actual experience in the affair, the known results, by handing to me and the public the number of horses he has shod (if a shoeing smith he be), the times they have been so shod, where they were and are to be found, to whom they belong, and the length of time their shoes lasted,—this information will lay the matter fairly open, by which the public, veterinarians, and myself, may have an opportunity of investigating the matter, and learning the length of time he has taken to form his judgment. The last nine months' test of my shoe upon every description of horse, and at every kind of work, has not only proved its superiority over any other, but has, in positive contradiction of the paltry objections raised by some few (perhaps interested persons), furnished me with upwards of two hundred testimonials of indisputable evidence from noblemen, horse proprietors, and veterinary surgeons, a few of which I have printed, and shall be happy to forward to any gentleman in the profession, on application, giving part of the evidence collected, and shewing alone sufficient reason for believing that any man who will anonymously assert that he has had the same experience as others, giving such contrary opinions supported only by glaring misrepresentations, pure ignorance, and reckless desire to condemn a system he evidently is utterly ignorant of, and flatly in March denying what he asserted with proof in November, must either have been then too proud of publishing and attempting to be a teacher, or now determined at the expense of others (under whom he pretends to claim protection) to volley forth disgraceful productions, picturing only his true character, deserving also to be known and receive the contempt he merits.

Allow me to apologise for the length of my letter ; but so many readers of your valuable publication having already an interest in the concave shoe, renders it an imperative duty that the unguised truth should be laid before the public.

I remain, Gentlemen,

Your humble and obedient servant,

HENRY BARRON RODWAY.

THE VETERINARIAN, APRIL 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

MR. RODWAY's angry communication, dealing, as it does, in abuse and insinuation in place of argument, would not have found admission into our Journal, had we not, from a sense of justice—a false one, perhaps, on the present occasion—suffered our prescribed laws to be set aside; and this we have been induced to do in consequence of the said communication professing to be a reply to two articles of our own: one in our number for last November, reviewing his prospectus; the other, reporting on his shoe, in our number of last month.

That Mr. Rodway, as a patentee, should feel disappointed and vexed at the failure of his project, is natural enough; but in giving vent to those feelings in language and expression such as he has used against us, he not only has injured his cause, but likewise his reputation.

He denounces our reviews of his prospectus and shoe as “unprofessional, contradictory, undecided, and unmanly;” and he accuses us of professional “ignorance.”

An attentive and unbiassed perusal of what we have written must be our answer to the first of these onerous charges; and as for the second, that of “ignorance,” it must be allowed, on all hands, that our knowledge of horseshoes and horseshoeing is light indeed when poised in the balance with the profound science displayed in those arts by Mr. Rodway: indeed, when it is considered how little time and attention we have bestowed upon the subjects compared with what Mr. Rodway can boast of, it is only to be wondered at that our “ignorance” is not greater than he has so charitably represented it. But, when Mr. Rodway throws out the base insinuation of “a more ignoble failing than ignorance,”—if he means that for us—we tell him to his teeth, that we fling it back upon him with indignation and disgust. But why should we feel angry? why, as Tillotson, in a truly wise

and christian spirit, has admonished us—" why should any man be troubled at the contumelies of those whose judgment deserves not to be valued ?"

To the accusation of fighting under " false colours," we have, in a note appended to Mr. Rodway's communication, already replied. Mr. Rodway was told by Mr. Youatt, at his house, when the former called, that the review of his productions would be *by the Editors*; and we defy Mr. Rodway, or any other person, to charge us with not having performed our task conscientiously, or with any desire or motive save the elicitation of truth.

Mr. Rodway alleges that we have attacked him " by misrepresentations, misquotations, and unfairness;" and commences his proofs—for we hold assertions as nothing without proofs—by saying, " the writer states, my shoe does not give the hold or grasp upon the ground I described, because there is no such concavity in the horse's foot as in my shoe." Now, what we said was this—" it is evident enough that Mr. Rodway has not obtained *his* proper hold or grasp upon the earth, by taking Nature as his guide:" shewing that it was not because there was no concavity in the horse's foot like that in Mr. Rodway's shoe, but because his shoe was a deviation from and violation of the tread of the natural foot, to a greater extent than existed in other horseshoes. What, pray, does Mr. Rodway call this, his very first, but a mis-quotation? And how many mis-quotations or imperfect ones, that altered the sense, did Mr. Rodway make in citing our first article in his former reply? We might multiply examples like the one above had we space for them, and did we not think that, in doing so, we should weary and disgust our readers, our object being *argument with proof*, not vague assertion and abuse.

We would ask Mr. Rodway this simple question--If that which now goes by the name of his shoe possesses so many admirable qualities, how came it to be laid aside *two-and-twenty years ago* by veterinarians well able to judge of its properties? It was at that time tried and found wanting; and fresh trials of it have only confirmed the opinions of those with whom it originated.

If Mr. Rodway will not believe our report of his shoe, let him listen to what others say. In this very number of our Journal happens to be a letter from Mr. Raddall, V.S., Plymouth; and what does it affirm? Why, that, “after having given the Rodway shoes a fair trial—having used them in his (Mr. Raddall’s) forge for the space of *from four to five months*—during which time he put on a great number of the patent shoes, many on horses of his own, ridden by himself, as well as on coach-horses, hunters, cart-horses, and ponies—he is compelled to say, that *not one of the presumed benefits which were held out so sanguinely by Mr. Rodway became verified in practice*; but he has found that *those very evils which the patentee so speciously professes to obviate by the use of his shoes, have been incurred by those even of his own manufacture.*” Have our opinions been more condemnatory than this? Does not Mr. Raddall confirm our statements when he finds the shoes “insecure upon the feet”—and “the nails frequently breaking in the neck”? &c.

Mr. Rodway boasts of having in his possession testimonials “upwards of two hundred” in number, and some coming from veterinary surgeons: perhaps he would kindly favour us with a few of the latter description. Should it, after all, turn out that we can be shewn to be in error, we promise him we are neither too proud nor too bigotted in our own opinions to retract. In the meantime we bid him adieu, with the full assurance that he for the future shall, at our hands, in his own acerbity of expression, “receive the contempt he merits.”

EDITORS.

ON THE DOG-CART BILL.

A FEW years ago the streets of the metropolis and its neighbourhood were somewhat too frequently occupied by small carts containing various articles for sale, and drawn by dogs. Occasionally these exhibitions were much too numerous, and almost assumed the character of a nuisance. These animals were comparatively harmless; little or no mischief was effected, but the owners were sometimes uncivil, if not abusive.

The writer of this article then lived in one of the suburbs of

London. His house was so situated as to command four streets, and he used many a time in the day to watch the proceedings of the dogs who drew or were left in care of the articles for sale. Of those that were employed, not one for a moment neglected his charge or interfered with the concerns of others. When they were directed to halt they doubled up their feet under the shafts, and waited patiently, sometimes for an hour or more, until their master returned. It was pleasing to watch them.

Generally speaking, they were in tolerable condition, and, in many cases, the attachment between them and their owners was evident. Occasionally, however, unpleasant scenes occurred. Two dogs coming from different ways, would fall out, and, encouraged by many a miscreant, accidentally passing, a regular fight ensued, repulsive to the feelings of the casual passenger, and, occasionally, a source of mischief.

Beside these dogs—the evidently trained and domesticated animals—there were often a set of wild and dangerous and cruelly-treated animals, flogged through the streets without mercy by their cruel owner or owners, and in the neighbourhood were miscreants—who let their half-starved dogs for hire—who were ready for all purposes of plunder, and who systematically desecrated the sabbath by a succession of dog-fights.

Under these circumstances, I do not severely blame the legislature for banishing the dog-cart from the purlieus of the metropolis: and yet I think that the matter might have been otherwise managed. Sufficient punishment might have awaited the guilty without driving from the neighbourhood of the metropolis many a family that was honestly exercising its calling. There was a degree of harshness about this which was unnecessary, and scarcely suited the title of “The Society for the Suppression of Cruelty.”

These dogs, no longer suffered to follow their usual calling, found their way more numerous into the country, and the dog-cart was used, to a greater or less degree, in every part of the kingdom, at a certain distance from the metropolis. The little articles of domestic comfort found their way to every part of our island, and the dog continued a useful and valuable animal.

Why did he not continue to occupy that situation? Why is he to be driven, as now attempted, from the useful occupation in

which he was engaged? *Why are the greater part of his species to be consigned to destruction?*

What would become of the inhabitants of the Northern regions if the dog was not harnessed to the sledge, and the Laplander, and the Greenlander, and he of Kamtschatka, drawn, and occasionally at the rate of nearly an hundred miles a-day, over the snowy wastes?

Is he capable of this? He performs it, and after, perhaps, a scanty meal, he sleeps soundly, until, on the following morning, he is roused to renewed labour. These dogs, however, had been travelling over a glazed surface, where comparatively little muscular exertion was required.

It was stated in the House of Commons, that there were cases of dogs being driven in Sussex as many as fifty miles a-day. I do not doubt it. There are miscreants capable of any kind of atrocity. I would have such fellows sought out, and exposed to the full penalty of the law. But there is no reason that, because some are shamefully used, *all should be destroyed*. This would be a species of false reasoning that no one could defend.

I am told that it is the opinion of Professor Sewell, that "the cruelties to which dogs used in trucks and carts are often subjected bring on fever, and that fever terminates in hydrophobia." I hesitate not to say that this is perfectly erroneous. *I challenge that gentleman to the proof*. These are diseases which, in many cases, have not the slightest resemblance to each other, *and the one never terminates in the other**.

Why, then, is the poor dog to be condemned to destruction? In Newfoundland the timber, one of the most important articles of commerce there, is drawn to the water side by the docile but ill-used dog. We need only to cross the British Channel to see how useful and, generally speaking, how happy a beast of draught the dog can be.

If in our own country, and to its deep disgrace, the employ-

* Professor Sewell should have recollected that, at the Veterinary School at Alfort, three dogs were selected as the subjects of some very cruel but decisive experiments with regard to rabies. It was during the heat of summer, and they were all chained in the full blaze of the sun. To one salted meat alone was given—to the second, water only—and to the third, neither food nor drink. They all died; but not one of them exhibited the slightest symptom of rabies.

ment of the dog has been accompanied by such shameful and wanton cruelty that the magistracy, somewhat hastily confounding the use of a thing with its legitimate purpose, has already forbidden the appearance of the dog-cart in the metropolitan districts, and is apparently taking measures to extirpate a great proportion of the canine race, I can only say that they are doing that which neither justice nor humanity will sanction.

It is the ardent wish of every good heart that a kindlier and better feeling may gradually prevail, and that this animal, humanely treated, may return to the discharge of the services of which Nature has rendered him capable, for which he was expressly designed, and which he is never happier than when discharging to the best of his power.

An able writer in "*The Times*" places our subject in a very proper point of view:—

"Is there," asks he, "any thing in the constitution, or diseases, or propensities of the English dog, as compared with those of other nations, which makes that an act of cruelty or danger in the one which is not so in the other?"

"If neither the constitution of the dog nor our climate causes or presents any obstacle, what is there, on the score of humanity or morality either, to be urged against making a dog work for his living as well as does a horse, an ass, an ox, or a human being?"

"But are there no advantages to be gained by using dogs as beasts of draught?"

"Why may they not be employed in the coal-pits to draw the corves along the narrow passages, instead of the disgusting beasts of draught into which human beings of both sexes are said to be degraded in some parts of England? Why might not a train of dogs instead of horses or mules, and at a much cheaper rate, draw a fly-boat along a canal?"

"I mention these as two cases that occur to me at the moment. I have no doubt that twenty other employments would be found if one were to take twenty minutes to think about it.

"Well, then, under such a system, every cottager and villager might profitably keep one or two of these faithful and vigilant guardians in his cottage or in his farm-yard; we should then hear of far fewer midnight attacks—far fewer incendiary atrocities. Who would dare to invade the slumber of the cottager, or to

venture into his stack-yard, if there were two or three fierce dogs at hand?"

Calmly, but earnestly, let me appeal to those who are eager to condemn and destroy those who never did them serious injury, and who might be taught to regard them with affection and gratitude. Never let it be said that we may travel over the world, and have the dog our companion, our friend, our guardian, but that, the moment we reach the British shore, we find this faithful and intelligent animal proscribed and destroyed! Is it so in any other country in the world? This is a question that should receive serious consideration.

I may have expressed myself warmly, but I mean not to give offence. We have all a right to our opinion: but after having pursued a certain course full forty years, and yielded and will yield to no one as a friend to the dog, I am not disposed now to abandon him.

As to the disease which seems so great a source of terror in the minds of some gentlemen, I again repeat that they are altogether without foundation. I challenge discussion on that point.

W. YOUATT.

MEDICAL REFORM.

THE following observations contained in an account of the anniversary meeting of the "British Medical Association," held 8th Nov. 1842, in these times when we are thinking about "putting our own house in order," are well worth our attentive perusal:—

Dr. Webster (the president) in a speech, not less admirable for its calm and independent tone than for the well-concocted scheme of reform it developed, after congratulating the assembly on the celebration of their sixth anniversary, and the results that had by their united exertions been accomplished, reminded them that the *essence* of reform consisted in *representative government*, and that its essential means might be comprised under few heads:—First, union and representation; secondly, uniform qualification for practice; thirdly, equality of rights for medical men; fourthly, protection to the public against illegal practitioners. Sir James Graham's bill was objectionable, he said, because it created not the bond of union for which they had been contending. Nothing was to be done to unite the profession into *one body*. They were weak because there were divisions and dis-

inctions among them, irrespective of education, merit, and talent.—Is it not a grievance that no bond of union whatever exists in the profession?—that invidious and unmerited distinctions are made?—that 20,000 practitioners in Great Britain are not consulted on matters connected with their own interests?—that they have no votes for those who manage their affairs?—that general practitioners are not eligible for the councils?—that the councils are self-elected and irresponsible?—Another palpable defect in the proposed plan is, the utter want of protection against illegal practice.—Gentlemen, says Dr. Webster, in conclusion, three words I will give you: they are those of one of our oldest reformers, and I trust you will deeply ponder them;—they are, *union, organization, and energy.*

Mr. Harrison (the secretary) then read the Report of the Council, and concluded by stating that the suggestions of the Council for the future course of the reformers were:—

First.—That the various associations, and individual reformers, should organize themselves into one representative body or faculty.

Secondly.—That a standing central committee be appointed by the associations and local committees, to promote the organization of the profession, to watch the proceedings in Parliament, and to act as circumstances may require.

Thirdly.—That the profession do oppose any measure of medical reform which does not recognise,—first, the union of the profession into a representative body or faculty;—secondly, equal rights and privileges for all members of that body;—thirdly, uniform qualifications for a license to practise;—fourthly, protection against unqualified practitioners.

Farther, the Council wish it to be distinctly understood that these few and simple principles are not intended to interfere with either the existence of the present corporations or the division of the profession into consulting and general practitioners. The *union* contemplated is simply that of *members* of the medical profession into *one body*. The qualification for admittance into that body should be uniform and extensive. Admission into it should give the license to practise in all or any of the departments of the profession, but it should not interfere with the right of its members to take higher honours, or other titles, or to join any other medical corporation.

The Council regretted to observe much indisposition on the part of Government and the corporations to grapple with the serious evil of *illegal practice*. The fallacious argument used was, “Oh! the liberty of the subject must not be interfered with.” What! not interpose to prevent poisoning by Morison’s pills, or sloughing to death by the acid lotions of St. John Long?

Wise restraint from quackery would save many thousands of lives annually, at the expense only of credulity and folly on the one part, and ignorance and wickedness on the other [cheers]. The recent convictions of several such persons had greatly altered the tone of those who had before contended for their right to practise without being qualified for that function.

Dr. Marshall Hall, in proposing the resolutions (already set forth as those upon which the present plan of reform is based), observed that he did so with unmingled satisfaction, inasmuch as he considered the general practitioners of the United Kingdom to be numerous enough and respectable enough to claim the exercise of power, and to take part in their government as a professional body. Their present relation to that government was precisely that of aliens in a foreign country. They must inscribe their names in a list, obtain a passport, and pay a contribution; but they were no more a part of the medical commonwealth, than the foreigner just landed on our shores, and registered at the Alien Office, was of our nation or its institutions. They were aliens from the posts of medical government, alike from its posts of honour and those of profit. He had long regarded it as a solecism in government for one order of persons to legislate for another in whose feelings they had no participation. Let them form themselves into a compact body for their own mutual good, and apply to Government for incorporation as "The Faculty of Medicine;" for powers to examine and grant licenses to practise throughout the British dominions, and for powers of self-government. This consummation would not diminish but greatly augment the prosperity of physicians and surgeons. These being the sources of error, all who were desirous of further honour would resort to them. Only let the admissions into that College be honourable, by annihilating all the odious distinctions which had so long disgraced them. Let those who were admitted at all be admitted altogether, enjoying equality of rights, and being equally eligible to posts of distinction. This was the case at the Royal Society; and had any evil accrued from it? But he would also devise new titles and sources of honour. He would confer prizes, medals, and every kind of distinction, for *real* advances in science alone. He did not despise the advantages conferred by a knowledge of the classics and mathematics, by a degree from Oxford or Cambridge, &c., but he would, in institutions purely medical, place the reward for real improvements in medicine above them all. Let, then, the general profession combine for general good, incorporate themselves, and then seek for legislative incorporation, power of self-government, &c. The curriculum and examination introductions to the faculty might be such as should be deemed best for the profession in general. The requirements for intro-

duction into the colleges might be as much higher as should be deemed most proper. Into the faculty would merge the Company of Apothecaries, first restoring the trade in drugs to the chemists, to whom it justly belonged, the profession being remunerated by a just honorarium, the chemist neither prescribing nor charging otherwise than for medicines properly compounded. The Society of Apothecaries had deserved well of the profession. May it become the nucleus of the faculty of medicine! Again, calling attention to his "scheme," he would conclude by cordially recommending the resolutions placed in his hands, having, as he believed, sketched the plan of medical reform that was most likely to be at once efficient and generally acceptable, in consonance with these resolutions, and pointed out the only way in which their objects could be speedily attained; viz. by a prompt and simultaneous movement of the general practitioners throughout the kingdom.

Lancet, 19th November, 1842.

ON THE LATE EPIZOOTIC DISEASES OF CATTLE, SHEEP, AND SWINE.

By W. YOUATT.

[Continued from page 144.]

THREE of our correspondents have, during the last month, kindly hinted at an improvement on our history of the epizootic diseases of cattle, sheep, and swine. They say that there was far more connexion between the epidemics of 1840-1 and 1842-3 than was suspected at the time, or even now believed.

Mr. Holmes, of Thirsk, takes this up in a most satisfactory way. As the number of our readers is rapidly increasing, and an understanding and comparison of the two epidemics is an object of the greatest importance, we shall now start from this part of Yorkshire; and hereafter, with regard to other communications, endeavour to combine the accounts that we receive, or satisfy ourselves with regard to the points of difference. Our friends, who have already given us a history of the first epidemic, would add materially to our obligation by this comparison.

The epidemic first made its appearance in the neighbourhood of Thirsk about the middle of June 1840, when it manifested itself among two or three herds, and seemed to be confined to them. The disease was accompanied by a slight frothing at the mouth, but there was no breaking out at the feet. On the 18th of July, at Sopcliffe, distant about five miles, the contagion was

more or less rapid ; and there it shewed its baneful influence, exhibiting its symptoms among some lots of Irish stock that were at the fair.

These Irish stock have, by common consent, been considered as the introducers of the epidemic into the Yorkshire Ridings ; and, from that period to the present, the contagion has been more or less rapidly spreading through every park and pasture in the three Ridings. Such were the first effects, that a complete and total stagnation took place of the sale of any kind of Irish-bred stock ; and the buyers of such were about as scarce as Queen Anne's farthings, or, in other words, not to be then found.

From the number of cases that I have professionally attended and casually heard of and seen, no state or condition—no situation or locality—has protected the poor cattle from the sickening hand of the insidious foe ; for there might be seen labouring under its clutches the poor, the middle or tolerably conditioned, and the fat : some in the field feeding upon turnips and grass, some in the straw-yard living upon turnips and straw, while others were tied up in the house, and fed with turnips, mashes, hay, &c.

Among many of the latter class was the milch cow, that had not been for upwards of six weeks previously in company with other cattle. Here I must beg to observe, that I have attended stock of this latter description (that is, the milch cow), that had never been out at all from the stall, and, therefore, could not be said, strictly speaking, to have received the infection by touch or direct communication from the infected ; and, although their well-sheltered and protected situation seemingly promised a barrier to the enemy, yet, strange to say, they—the sheltered and protected—were, in many instances, among the first that exhibited symptoms of the complaint. Sometimes the very reverse has happened : in fact, as before observed, as nothing could completely stop the progress of the disease, so nothing—old or young—fat or lean—in warmth or cold—has completely resisted its influence. I have even had calves of a fortnight old, and younger, as much, and in degree, as violently affected as their dams or parents. Yet, nevertheless, I found warmth of very great benefit to such as were labouring under the disorder ; and also the too free exposure of the sick, as practised by some, very prejudicial. Experience indubitably proved to my satisfaction, that such stock as were labouring under the influence of the epidemic, when too freely exposed to the cold, generally lost a great weight of flesh, beside having the complaint under much worse circumstances.

The general symptoms that I observed are, a staring coat—

the eye a little sunken in the orbit of the head—large blisters arising on the base of the tongue, and containing a white kind of serous fluid, and the blisters sometimes extending from the base to the tip of the tongue—the front teeth of some very loose—a great discharge of saliva from the mouth, and, in bad cases, a jelly-like fluid instead of saliva—tenderness on the skin and back when touched, so much so, that a common observer would say that some one had been beating them severely with a stick; and, if compelled to walk, they appeared as walking on stilts. They very much resembled a horse labouring under an attack of laminitis. The pulse from 60 to 70, but weak—a pulse which indicates a great deal of irritation, but not of inflammation.

I have never, as yet, seen a case that would warrant me in bleeding either fat or lean stock. It does not seem to me that one organ alone is attacked, but every organ, more or less. The mucous membranes appear to be particularly so. I have sometimes gone into a field among a number of stock, and have pointed out some as the next most likely to be invalided. They did not then either evince lameness or shew any discharge from the mouth; yet their apparently starved and chilly looks convinced me that they were infected, and the correctness of my judgment was not long in doubt, for all the other symptoms shortly afterwards rapidly developed themselves.

Some would be quietly chewing the cud in an apparently good state of health, and yet, scarcely half an hour afterwards, would shew all the peculiar characteristic features of the complaint.

I believe that lameness generally accompanies the rising of the blisters in the mouth, at least my experience has hitherto shewn so.

The precise and exact cause of the disease seems to be wrapped in so much speculative doubt and mystery, that I scarcely dare venture to hazard an opinion; yet, after revolving the matter over and over again, and then unbiassedly canvassing the sentiments of others, I am inclined to think that it is a constitutional derangement of the system, produced, under predisposing circumstances, by an atmospheric influence of some (at present unknown) gaseous fluid, which seems to have a peculiar effect upon the animal system in general.

A wet and damp state of the atmosphere seems to favour the disease, while a clear frost appears to operate reversely. A week's continuance of fine frosty weather almost cleared us of the nuisance, when a return of moist and warm weather again rapidly multiplied new cases. As yet, I have not heard of or seen a second attack, neither do I suppose the thing likely to happen.

That the disease is contagious there is not the least doubt; for no sooner has an infected beast been driven near or associated with others, than he has speedily shewed symptoms of bodily ailment.

I have also known it appear among stock that had had for months no visible direct communication with the infected, nor even with other cattle, and among others that had never been nearer strange stock than having been pastured in a road-side field, where the infected might probably pass. As soon as the disease made its appearance upon a farm, it spread like wildfire over most or all of the adjoining ones; and yet, at the same time, there was no apparently direct communication with the infected, which, as soon as the disease was observed, were also generally removed to a place where the others could not possibly have any access. From this, probably, may be deduced a not very unreasonable inference; viz., that in these present cases, as in many human ills, there seems to be an atmospheric agent wafting abroad the effluvia or seeds of disease and death.

I have seen a whole fold of pigs take the disease before it was in the least manifested among other stock. The symptoms in the pigs were very much the same as with beasts or horned cattle. The disease among pigs has not been so fatal here as more northward, where several farmers have lost their whole stock.

Sheep appear to me to have suffered much more considerably than cattle; but this I attribute to their generally exposed state.

I have heard of a person residing near York who lost eleven young calves about one day after calving;—of another, who lost four; and a third who lost six in the same way. All the cows had had the disease previous to calving, but had recovered before the dropping of the calf. These cases not being under my notice, I am unable to state the treatment. The fatality of the calves appears to me to have been caused by the fœtus having imbibed the seeds of the disease in that state when almost every ailment of the dam is generally productive of ill consequences to their weak and imperfectly formed young.

My treatment of such cows has been quite simple;—viz., the combination of tonics with aperients, which I have always found to have the desired effect. I am no advocate of the strong drastic purges that are sometimes imprudently given; for I feel persuaded that more harm than good is the result of their use, as they (i. e. the sick stock) are generally found labouring under great debility. Under such circumstances, violent purging medicine would have a much more severe effect than in ordinary cases of sickness.

I did not lose even one of my patients from the commencement of the disorder; neither did I hear of any, except in those cases where the strong drastic purge had been given, and the

animals afterwards left exposed to the cold. In consequence of few fatal cases occurring in this neighbourhood, the farmers treated the matter lightly, seldom doing or giving any thing to their lean stock except washing out their mouths with an astringent lotion, and then leaving them to chance or the care of a benevolent providence.

When fat cattle or milch cows took the disorder, and the former especially, they generally lost a great deal of flesh, and the latter their milk. If an aperient, as already recommended, was given, the loss of either might, in a great measure, be prevented. Perhaps the fat cattle would not lose more than ten pounds, or a stone at the utmost; while, if left to mere chance, the odds were, that they would lose nearly ten stone: this, however, is understood as regarding bad or extreme cases. The results from the negligence of the owner or manager were yet more serious. Even among such as appear quite left to fate, it may possibly happen that some will have the complaint very mildly. The administration of proper medicine, in conjunction with proper care, recovers the animals in three or four days; whereas the same beast, if left to mere chance and casual circumstances, will probably be a fortnight or three weeks before convalescence.

I have seen the milk of a cow that had the epidemic curdle when boiled; in others, not the slightest difference was apparently observable. I have heard of a few individuals who evinced symptoms something similar to what animals in the epidemic shewed, from partaking of the milk; and I know of others that partook of the same with impunity. The difference seems to me to consist in the predisposition of the constitution of the individuals to the disease, as well as the severity of the disorder of the animal from whom the milk is drawn. For my own part, I have generally recommended that the milk of such cows as were infected should not be used until five or six days have elapsed after convalescence, when the healthy quality of the milk will have returned. I have known pigs shew symptoms of the disease ten hours after taking the infected milk. I have also known it given to dogs and cats that experienced not the slightest visible ill effect. To a foal of mine the milk of infected cows was given for about a week, and no bad result was afterwards in any degree exhibited.

P.S.—I have just heard of several fatal cases in Westmoreland. One individual there has lost ten head of stock; whence it would appear that the fatality there is much greater than here.

I have known several gentlemen farmers lose from twelve to thirty of Irish, while this country-bred or Scots altogether escaped.

ACCOUNT OF THE EPIDEMIC IN 1842-3.

By Mr. HOLMES, of Thirsk.

March 18, 1843.

Having already furnished you with an account of the epidemic that prevailed in this part of the country in the year 1841, and in consequence of so many practitioners having also sent you detailed accounts of the same as they came under their notice, but little now remains for me to do, except to give you a description of the disease which is now sadly devastating the country.

After 1841 had passed, practitioners as well as farmers hoped that the succeeding year, 1842, would in a measure be exempt from this noxious plague, as the spring set in so favourably; nor was there any thing apparently to discourage such a hope until August came, and field stock, in general, seemed in condition, and, to outward appearance, to have thriven well with their summer's graze, especially such as had been previously reduced, but had seemingly fully recovered. Soon, however, from the heat of the weather and their improved condition, many that had, to all appearance, been accounted perfectly healthy and sound, again shewed symptoms of the presence of this farmer's foe, although under a different modification; and here I may observe, that the cattle which came again under my notice were for the most part Irish ones of 1841; for I scarcely was ever called upon to attend an English or a Scotch cow or ox.

The symptoms which first appeared were a sadly languishing look, attended by extreme disinclination to motion; little or no heaving, but a heavy deep moan was heard every time the affected animal respired. He would generally separate himself from the others, and wander to some unfrequented and retired place; and there, unless disturbed, he would remain quite dejected and solitary, as if he were an outcast. To use a comparison, I could not compare him in that state to any thing better than to the Mosaic proscription of leprous persons.

As the malady increased, or the symptoms became more developed, the respiration of the animal was so difficult as almost to amount to suffocation. At this stage the poor creature seemed so heavily burdened as to be utterly heedless as to where its head should be thrust, apparently unconscious of coming into contact with any thing, until death at last relieved it of its protracted sufferings.

From the very first attack considerable disgust was shewn to every kind of food, as well as to drink. I have known some to

have lived almost a fortnight without being seen to take or touch any thing eatable.

The post-mortem examination of all such as I have seen exhibited a total destruction of the lungs. The whole substance had become, as it were, a congested mass; the texture and cells were quite obliterated, while the lungs themselves were enlarged to four times their natural form. In a great number of cases effusion had taken place to very considerable extent, and large quantities of lymph were thrown out between the lungs and the ribs. The pericardium of the heart also increased in thickness in the ratio of five or six to one, compared to what it ought to be. Lymph in considerable quantities was likewise effused all around it, besides suffusion within the pericardium itself to a great extent in proportion to that of the chest, which, when opened, was found a complete mass of disease, quite in a putrescent state.

This was the case more or less in all, according as the disorder had shewn itself, or assumed different modifications.

Frequently the most potent remedies were of no avail, and the whole arcana of simples and compounds were baffled and foiled by this death-grasping plague; and yet the impatience of employers naturally required something to be done.

I believe there were many farmers who, despairing of relief from art, at last turned out their stock to shift in the fields as they could; and, strange to say, some of these unbelievers in the *ars medica* were as lucky as others who doctored in all ways and shapes.

In my humble opinion, however, extremes are never beneficial, and I attribute the non-success in many instances to the delay of the owners of stock in applying to well-qualified practitioners for timely assistance, instead of physicking under the guidance of some random cowleech or mere seller of drugs, who are ever ready to dispense any thing, or any nostrum, providing there may be a good profit on the sale thereof. When the cowleech and the druggists fail, the veterinary surgeon, as a last resort, is called in; and, should the case, as was now most likely, be hopeless, of course, *he* was to blame, although the most innocent party.

Bleeding, I have observed, instead of relieving, only hastened the approach of death. The treatment most successful in such cases as came under my observation, was to give small doses of sulph. mag. combined with emet. tart., and to keep the animal quiet. Such as had had the epidemic of 1841 in a slight degree I observed to recover, while those which had been more severely affected were almost sure to die.

On such a subject it naturally occurs to all, What can be the cause of visitations so fatal and repeated? A topic abounding

in materials for discussion so abundant, has, as might be naturally expected, occupied the attention of the profession no little, and excited discussion and elicited remarks to such a degree as requires no slight caution on my own part how I hazard my opinion, when so many of my more learned and elder brethren have already published theirs; and yet, although I may seem to differ in degree from those accounted as authorities, whose dictum is law and all others deemed but folly, yet, in conformity with your request, I offer a few remarks.

The visitation of 1842-3, so far as my observation has extended, was attributable to the animals still retaining remains of the epizootic of 1840-1, although apparently outwardly quite recovered; and who, when turned out into good and flush pastures, fed rapidly and shewed great increase of condition. This suddenly puffed up grassy state of the animal, when the action of the heart was still further excited by the increased temperature of an August sun, increased the predisposition of more speedily and more malignantly aggravating the disorder, as well as rendering the lungs, which is the chief seat of the disease, less able to withstand a second attack.

The next question is, Why has the disease shewn itself to so much greater extent among the imported Irish than among our own English or Scots? and why the cases themselves have been much more severe in the former than in the latter? I have given this point a very careful consideration; and the more I think or make inquiry about it, the more convinced am I of the correctness of the fact, that the imported Irish, having previously suffered so much in the voyage over, and being afterwards over-travelled from fair to fair when labouring under the complaint, were literally worn down by fatigue and disease, thus augmenting the disorder twenty-fold before they came into the hands of the farmers or graziers in this country; and, consequently, their enfeebled and way-worn constitutions were thus less able to oppose resistance to the attacks of this pestilence. The real losers were the buyers, and not the importers, who were the main instruments of aggravating the disease, by their gross neglect and want of feeling in hurrying the poor creatures so much about the country when worn out by travel and sickness, thereby entailing a serious loss to the community at large.

Your's very truly,
GEO. HOLMES, V.S.

A LECTURE ON FAT AND MUSCLE, DELIVERED TO THE PROBUS FARMERS' CLUB.

By Mr. KARKEEK, V.S., Truro.

ON Saturday evening, the 18th instant, a lecture on the Production of Fat and Muscle was delivered by Mr. Karkeek, of Truro, to the members of this institution. This is an interesting and important lecture to agriculturists, as may be supposed from the circumstance of the English Agricultural Society having lately offered a premium for an essay on the same subject, explaining the causes which appear to determine the production of fat and muscle respectively, according to the present state of our knowledge of animal physiology.

Mr. Karkeek stated, at the commencement of his lecture, that some of the physiological views which he had adopted were those of Professor Liebig, they having yielded the most valuable results, in relation to the connexion between organic chemistry and dietetics,—under which head was comprised the nutritiveness of particular vegetables on the feeding of cattle.

With the view of his lecture being clearly understood, he first directed the attention of his audience to some of the phenomena connected with *growth* and *assimilation* in vegetables and animals, shewing the manner in which the former produce the blood and flesh of the latter; and that man, in consuming animal food, consumed, strictly speaking, the vegetable principles which have served for the nutrition of cattle. This part of the lecture was explained in an easy manner by reference to tables containing the analysis of the elementary and proximate principles of the food of herbivorous animals by Boussingault and others, which proved that vegetable fibrin, albumen, and casein—the true nitrogenized principles of their food—were, in fact, identical in composition with the chief constituents of blood, animal fibrin, which is the fibrin of flesh, animal albumen from eggs, and animal casein from milk. He next shewed the difference which existed in the aliments of cattle as far as they were concerned in the production of *fat* and *muscle*. This portion of the lecture was clearly explained by reference to Professor Liebig's theory, that one of the effects of respiration was to remove some of the carbon from the blood by the oxygen of the atmosphere, and the forming of carbonic acid gas; in which process a separation of two essential parts of the blood took place—the one being composed of *nitrogenized* materials, capable of assimilation to the various organs and tissues, muscles, nerves, bones, &c.—the other part being com-

posed of *non-nitrogenized* materials, which were employed as elements of respiration, and in the production of animal heat.

The cow, he said, according to Boussingault, consumed in twenty-four hours 69 oz. of carbon, which were the combustible materials of the food, and she required in the same period to inhale 11 lb. 10 oz. of oxygen, which was the supporter of combustion. But should it happen, as it does in all animals that are stall fed, that a less quantity of oxygen was inspired than was necessary to convert the carbon of the blood into carbonic acid gas, the superabundant carbon was returned into the circulation, and went to the production of fat.

This was a very interesting part of the lecture, as it was clearly shewn that all the carbon of the food not consumed in the lungs was actually used in producing fat, and that the amount of nourishment required for an animal must be proportioned to the quantity of oxygen taken into the system, and as air was expanded by heat, and contracted by cold, it was evident that equal volumes of hot and cold air must contain unequal weights of oxygen, *ergo*, a larger quantity of food was required when animals were kept cold than when they were warm. This was clearly explained by reference to the voracious appetites of the Arctic savages for train oil, tallow candles, and animal food, compared with that of the Hindoo, living chiefly on rice and vegetable food.

The practical deductions which he drew from these facts were the necessity of keeping animals warm and perfectly quiet while in a state of feeding; the effect of exercise being to increase the circulation and quicken the respiration, and the consequent consumption of a greater quantity of food.

He then described the mode of rearing calves for veal in Holland, which was done by keeping them in a small, dark, clean, and dry house, so narrow that they could not turn, and this was said to be very successful.

He also related the method of suckling house lambs, of the early Dorsetshire breed, for the London market. The dams were fed with hay, oil-cake, corn, and cabbage, which is given in an enclosure adjoining the apartments where the lambs are confined. The lambs are excluded from the light, except at intervals when the shepherd suckles them on the ewes. It was by these means that they speedily fatten, and their flesh became exceedingly white and delicate, and fetched a high price in the London market.

The lecturer produced many other examples, in the feeding of sheep at different temperatures, and under different conditions, clearly shewing that, by affording animals warmth and shelter, particularly in the winter months, the saving of food would be very considerable.

The next part of his lecture went to shew the manner in which *muscle* or *flesh* was produced. This was also clearly exhibited to the farmers by reference to tables containing analyses of different kinds of food, which proved very satisfactorily that an immense difference existed on account of some kinds producing fat and others producing muscle.

According to those tables, which were the result of the analyses of professor Playfair and Boussingault, peas contain 15 per cent. more of the muscle-forming principle than barley-meal; barley-meal 12 per cent. more than potatoes; and potatoes 1 per cent. more than white turnips.

He strongly recommended that barley-meal, when it was cheap enough, as it is at present, should be given to growing stock, particularly to sheep, while feeding on white turnips. A pint of barley-meal a day would increase the quantity and quality of the flesh and wool at the same time; it would also tend to prevent *scouring*—the frequent consequence of so much watery food. For the rearing of breeding animals of all descriptions, he recommended the use of barley-meal, or ground oats, and strongly condemned the practice which was frequently pursued of feeding young stock on linseed-cake, which is a very excellent food for producing fat, but not flesh. He also condemned the very common practice of tying up the young bull at so early an age as eight or nine months' old, and fed at the same time as a calf intended for the butcher. Too much liberty, he considered, could not possibly be given for the first two years, as far as was consistent with warmth and shelter in the winter months. Where the pastures were small and convenient, there was no difficulty or danger in allowing the young animal to graze during the second summer, and, if not convenient, a large covered shed, with a straw yard attached, would answer the purpose, with a comfortable loose box adjoining a straw yard in the winter, in which he might be allowed to range when the weather permitted.

Without exercise in a moderate way, the young animal could never obtain that proper development of muscle which is required. This, he said, was dependent on an admirable law, that within certain limits, in proportion to the exertion that it is required to make, a part increases in strength, fitness, and size. It was from the want of a proper supply of nitrogenized food, and also of sufficient exercise, that so many of our best bred animals, particularly cattle and pigs, were prevented from breeding at a time when the greatest benefits and profits might be expected by increasing their race. He alluded more particularly to the North Devon cattle, and those of the improved breed—as well as to a number of the Chinese breed of pigs.

The lecturer then shewed that the distinguishing character of a well-bred animal depended not so much on the *external* as on the *internal structure*—such as the lungs, liver, spleen, kidneys, stomach, intestines, &c.

Here the lecturer made a singular statement:—"That Professor Playfair, in his lecture before the English Agricultural Society, had proved, what all butchers knew perfectly well, that an 'ox or sheep having small lungs and small livers will fatten more readily than those having large lungs and large livers;' but he, the lecturer, was also convinced, *that in proportion as an animal became fat, did those organs actually diminish in size.* He drew his conclusions, he said, from examining a great number of stall-fed cattle, chiefly of the Devon breed, averaging from 6 cwt. to 10 cwt. of beef. He had seen them slaughtered at all stages of feeding, from four to eight months, and invariably found that according to the amount of fat which they possessed were those organs reduced in size. This was a circumstance never stated before by any author, although the butchers knew this also from frequent experience, and he had gathered his information by visiting their slaughter-houses.

He explained this by reference to the changes of particles constantly going on in the majority of the tissues of a living body, instancing the effect of exercise on the bulk of the muscles of the arm of a blacksmith; and in the arm of a person unaccustomed to labour. The production of fat he had already shewn to be the consequence of the organs of nutrition not performing their natural offices. The lungs, then, of a stall-fed animal adapted their size to the quantity of oxygen consumed, and the liver to the quantity of bile secreted; and it was also a remarkable coincidence, which would account for the diminution of the intestines in a fatted animal, that the fatter it became, the less food it consumed.

The lecturer drew some very important practical deductions from these observations; for if they were true, he said,—the effect of breeding from fat animals, or from animals disposed quickly to become so,—*function* here would *react on organization*. By *reaction*, he meant, when an organ, as the lungs, for instance, became diminished in consequence of the animal becoming fat from not performing its natural office, its diminished structure, in breeding, would in some degree be produced in the offspring; hence the *reaction*, and if the same system is pursued, particularly in breeding from the nearest affinities at the same time, the effect would be more speedily produced. The lecturer here alluded to the improved short and long-horned cattle—the improved Herefords—the improved Devons, as well as the new Leicester sheep, all

of which were originally produced by this method of breeding. Alluding to the effect of breeding from fat animals in this manner, he said that early maturity, which was very desirable to be obtained, was the consequence. But he was of opinion that sometimes it was carried too far, as he believed that extreme early maturity, and the certainty of propagating their kind, were seldom compatible; and he also believed that the loss of a trifling degree of *fat*—which would be compensated for by an increase of *flesh*—increase of *health*, and an increase of strength, with the certainty of propagating their kind, would be excellent substitutes.

SOME CONSIDERATIONS IN FAVOUR OF THE LEGAL PROJECT PRESENTED TO THE CHAMBER OF PEERS, WITH REFERENCE TO A CHANGE IN THE POSITION OF THE FRENCH ARMY VETERINARY SURGEONS.

By M. RENAULT, Director of the Royal Veterinary School at Alfort.

[Continued from page 180.]

SOME persons imagine that it would be sufficient to increase the pay of the veterinary surgeons, and thus to ensure them a more comfortable retreat, their rank in the army remaining as it is, or at least *not raising them above the situation of subalterns*.

Others regard it as indispensable that their pay and their pension should be increased; but they consider it as not less important and just that their rank in the army should be raised, and that the veterinary surgeon should occupy a station next to that of the medical man.

Let us examine these two opinions.

A very little reflection will suffice to shew that the first of these systems would entirely miss its aim, and would leave the administration in the same state of embarrassment, and the regiments in the same want of well-informed men.

What is in reality, at the present time, the pecuniary position of the veterinary surgeons of the army? The annual pay of the first veterinary surgeon amounts to 1400 francs, or £58..6s..8d., to which is to be added certain profits which they obtain by furnishing the regiments with sufficient and proper medicines. This usually is about 800 francs, or £33..6s..8d., varying materially according to the healthiness of the situation, the state of the

atmosphere, and the prevalence of epizootic disease. It follows from this that the first veterinary surgeon derives an income of about 2200 francs a year; and, in order to increase the real pecuniary advantage of the veterinary surgeons of the regiment, their pay must be raised to more than 2400 francs.

What is the design of the law? It is true that they raise the pay of the first veterinary surgeons from 1000 francs to 1800 francs. But, in reality, it is reported to be the intention of the Minister of War entirely to suppress these *aménagements*, and by using economy in furnishing the medicines for the regiments, he calculates that the pecuniary improvement in the situation of the veterinary surgeon, will be much increased, but the means by which he hopes to entice and fix in the army more worthy veterinary surgeons, will cause to them an annual loss of at least 400 francs. On the other hand, I have said, and every one will agree to it, that, at the present time, to attract and attach to it superior men in this profession, the Administration of War ought to offer them advantages at least equal to those which they would obtain in common practice. But what veterinary surgeon is there established in any tolerable locality who does not gain more than 2000 francs a year? The common veterinary surgeon gaining more than the regiment offers him, he hesitates to engage himself in it.

Then, without doubt, it is only by increasing the pay of the surgeon that we can hope to obtain and preserve talented and useful men in our cavalry regiments.

I will add, to the honour of the veterinary surgeon, that it was never for *money* that he asked when he complained of his position; it was on account of the total want of consideration and common respect. It was not the money which concerned him, *it was his military rank*. In the army, more than elsewhere, it was not a struggle for gain, *it was a question of honour*.

For my own part, I am entirely of the opinion of those who think that it would be at the same time an act of justice and necessity to class the veterinary surgeons more worthily. I believe with the Government—with the majority of the general inspectors of cavalry especially consulted on this question in 1838—with the President of the Chamber of Deputies, who has just given his sanction and vote on the occasion, that it is highly proper to allow admission of the staff of the regiment to those who are at the same time the oldest and the most distinguished veterinary surgeons of every regiment.

Is it, then, any unfounded pretension, *exorbitant and ridiculous*? Is it *vanity* and *presumption* on the part of these useful men to think themselves, after long and painful studies—after numerous

difficult and scientific operations—after a long series of honourable services in the class of subalterns, to wish to attain at last to the rank of the least elevated of the officers of the regiment?

There are not in the regiments, if I am not mistaken, more than two classes of men to whom it is forbidden to go beyond the rank of inferior officers.

It has been asked whether it is not to be feared that if they elevate the position of the veterinary surgeons too much they will become too proud and disdain to perform their duty? In the first place, what is this high rank from which they would be obliged to descend in order to perform any of the operations that may be occasionally required? The professors—the directors of the royal veterinary schools, are they not in a position comparatively much more elevated than that of a sub-lieutenant? Nevertheless, not a day passes in which they do not employ themselves, without any fancied degradation, in operations of every kind that can occur in the practice of veterinary surgery. Every day some of the veterinary surgeons established in Paris, who are members of the Royal Academy of Medicine, personally attend to all the minutiae of their profession. At the academy itself, not one thinks that his dignity is compromised. M. Barthelemy did not for a single day cease to attend to the circumstances of every patient during the year that he presided at this learned assembly, and no one thought, whatever might be the operation, that he degraded the high situation in which he found himself placed.

There is a fact, which for many reasons should now be brought forward with regard to the veterinary surgeons of our regiments, namely, the rank that is occupied by men in most of the foreign armies, to whom are intrusted the care of the health, and the general treatment of the cavalry horses. The statement that I am about to make results from official documents which I have procured within the last four years from the directors of the principal schools of Europe.

1st. In ENGLAND every veterinary surgeon, on arriving at the regiment, has the rank of cornet (sub-lieutenant).

After two years service he attains the rank of lieutenant, which is the highest that he can attain.

Pupils are admitted to the Veterinary College at London without previous examination, and two years of study are required before they can obtain their diploma.

2d. In HOLLAND, the second veterinary surgeon has the rank of sub-lieutenant.

The first veterinary surgeon preserves the same rank.

3d. In BELGIUM, the first veterinary surgeon has the rank of lieutenant, and the second that of sub-lieutenant.

The first veterinary surgeon attains the rank of captain, and the second that of lieutenant after ten years of service.

4th. In HANOVER every veterinary surgeon, in coming to the regiment, occupies the rank immediately above that of the under officers.

After a certain time they gain the rank of sub-lieutenant.

They form part of the staff-office of the regiments.

GERMANY.

5th. In AUSTRIA, military veterinary surgeons have the rank of quarter-masters, as in France.

In PRUSSIA they have only that of brigadiers.

But it must be observed on the one part, that in these two states, veterinary surgeons, properly speaking, are ranked in the class of *farriers*, and all of them compelled to practise the shoeing of horses; but the infirmaries and medical management of the horses of the troops are under the direction of a superior class elected from these, and are the real veterinary surgeons of the regiment. They are officers of a higher order.

6th. In BAVARIA, the veterinary surgeons of the army are classed since 1829 as follows :—

A. *Assistants* (to the number of 14), who have the rank of cadets*.

B. *Inferior veterinary surgeons* (to the number of 4), who have the rank of sub-lieutenants.

C. The *principal veterinary surgeons of the second class* (in number of 2), having the rank of second lieutenant.

D. *Principal veterinary surgeons of the first class* (to the number of 4), having the rank of first lieutenants.

E. Lastly, as reporter of veterinary affairs, and connected with the minister of war, is the *principal veterinary surgeon of the army*, who has the rank of lieutenant-colonel.

7th. WURTEMBERG. Since 1830, there is a veterinary surgeon for each regiment of cavalry.

This veterinary surgeon, at the time of his entering into the regiment, has the rank of sub-lieutenant.

After *two years* of service, he has that of captain.

8th. HESSE ELECTORAL. The veterinary surgeons of the army are divided into veterinary surgeons of a regiment, and veterinary surgeons of the squadron.

They have the rank of lieutenant.

9th. HESSE (GRAND DUCHY). In the only regiment of

* The cadets are the pupils of the military school, or candidates under-lieutenants not yet placed.

cavalry that is kept in this duchy, there is a veterinary surgeon of the regiment, and a veterinary surgeon of the squadron.

Both are *similar to the surgeons* of the regiments, and have the rank of lieutenant.

10th. BADEN (GRAND DUCHY OF). There are two veterinary surgeons in each of the three regiments of this duchy.

The second veterinary surgeon has the rank of adjutant.

Next to whom is the first lieutenant, and above him the captain.

11th. NASSAU (GRAND DUCHY). The only military veterinary surgeon of the Grand Duchy of Nassau is attached to the artillery. He has the rank of lieutenant.

12th. EGYPT. By a document proceeding from, and signed by, Mehemet Ali in 1833, the veterinary surgeons of the army are divided into three classes.

A. The *inferior assistants*, who have the rank of sub-lieutenants on coming to the regiment.

B. The *assistants*, who have the rank of lieutenants.

C. The *veterinary surgeon majors*, who have the rank of captain.

It is in France, where veterinary medicine took its birth; where it is incontestably the most advanced; where it is taught with the fullest development, and to which most of the professors of the schools of Europe come to improve themselves;—it is in France, where the want of resources and the numerous losses in our cavalry troops ought to attach most importance to the worth of the veterinary surgeons, that they are exclusively placed on the lowest scale.

[To be continued.]

VETERINARY JURISPRUDENCE.

WARRANTY OF A HORSE.

SAXTY v. WILKIN.

THE declaration stated that the defendant sold plaintiff a horse for £56..16s, warranting it sound, but it was unsound. Defendant pleaded, first, that he did not warrant, and second, that the horse was sound.

Mr. Thesiger said that the plaintiff was a tailor, at Colchester: he mentioned this that they might not be taken by surprise by the humour of his learned friend. Defendant was a farmer, at Tollesbury, twelve miles off. Defendant and plaintiff had had dealings together—that was, plaintiff had

worked for him in his business, and defendant, understanding that he was in want of a horse, was kind enough to drive this horse over, and strongly recommended him to his friend the tailor. It was a showy animal, and it pleased the plaintiff, who was disposed to have a trial of it. It was put into the plaintiff's gig, and defendant, wishing to drive his own horse, got into the gig and drove it quietly over the stones, but when off the stones he began to trot, and plaintiff did not perceive there was any symptom of lameness or unsoundness. Plaintiff said it would suit him if it was a quiet horse, and defendant said he would warrant it sound and quiet in harness. The price agreed upon was £56.16s.; £55 to be paid in money, and £1.16s. taken out in a pair of trousers. The parties separated, mutually satisfied—the plaintiff that he had got a fine horse, and the defendant that he had £55, and a pair of trousers in prospect. On the next day the plaintiff's groom rode the horse, when he observed that he went a little unsteady with one of the hind legs, and he had no doubt the horse was lame in the near hind leg. Another trial was made by the plaintiff's son, but being no judge he took him to Mr. Garrett's, a friend of his, to have his opinion of it, and he observed that it was a little lame in the near hind leg. This opinion was brought back to the master, who then wrote a letter, dated the 2d of May, to the defendant, stating that he found the horse quite off his legs when he first went out of the stable, and till he got warm he was stiff all round, which almost amounted to lameness. To this the defendant returned the laconic answer—"I can only say I sold the horse to you sound and quiet in harness, and that I will abide by." Plaintiff not being satisfied, on the 20th wrote again, saying that the horse was decidedly lame; adding, "I bought him on your word as a gentleman; if I had been treating with a dealer I should have been on my guard, but from what you said I took it for granted he was sound. I shall fully expect you will take him back, or make some allowance." In reply, the defendant said the horse had been in his possession eighteen months, and had never been lame during that time, as he could bring twenty persons to prove; and he trusted he should hear no more on the subject. Some time after the plaintiff directed his groom to take it back to defendant. Defendant refused to receive it, and on the 18th of June plaintiff gave notice that it would be sold by auction. It was advertised for sale, and on the 25th of June was sold, with all its faults, for £22.

Under these circumstances plaintiff brought his action for the difference in price, the expenses of the auction, and the keep till the period of the sale. Now, it would be necessary to prove—1st, that defendant warranted the horse, which would be done by his letter, in which he admitted it, and it could also be proved by plaintiff's son. He should also prove that the horse was unsound at the time of the contract: this he should establish by distinct and indisputable evidence—by the groom, and by four veterinary surgeons, who severally saw it, and came to the conclusion that it was unsound by reason of a bone spavin in the near hind leg, and contracted hoofs. It seemed that defendant had hunted the horse, and hard work might have led to inflammation, and this would produce contracted hoof.

William Saxty, examined by Mr. Chambers:—I am the son of the plaintiff, who is a tailor, at Colchester; defendant lives at Tollesbury, twelve miles off. On the 28th of April, a horse was brought to my father's stables; my father was out; I saw the horse, walked him about, and put it in the stable. Half an hour after my father and defendant came into the shop. My father asked if it was sound, he said Yes, and the price was £60. My father offered to give £55, and a pair of trousers, value £1.16s.; he agreed to this, and my father paid him: it was then about one o'clock. The next day I took the horse to West Bergholt, to shew him to Mr. Garrett; after walking him off the stones, I

trotted him, and observed to the groom I thought he was “dotty,” as his near hind leg seemed to drop. I shewed him to Mr. Garrett, without saying any thing about his being lame, and trotted him about the road; Mr. Garrett said that it was lame. I drove it back, and it still went lame. I drove it five or six times, and it always went lame. Afterwards the horse was taken to the Lion Inn, at Tolleshunt D’Arcy, where I paid two guineas for his keep. It was brought from thence and sold, and I saw it running in the Shannon coach, which is horsed by a Mr. Garrett, and changes opposite our shop. I saw that he was still lame, and I saw him stumble.

Cross-examined by Mr. Platt:—When the parties came into the shop I learned that the horse had been tried. He “dotted” with the near hind leg—that was apparent the first time I went out. Mr. Baker, the veterinary surgeon, had seen the horse before it was sold on the 25th of June. He examined it, and I understood from my father that he thought there was the appearance of a spavin on the hock. Mr. Baker said that was not an unsoundness—he thought it might have been foaled so. I do not understand much about horses, nor does my father either. [Laughter.] I fancied that this leg looked different to the others,—it was larger. I often drove the horse, but very steadily, and the longest journey was to Braintree, which is sixteen miles. Mr. Whale is driver of the Shannon coach—he is here to day; I know the road to Stratford where the horse ran in the coach, and there are steep hills in it. Mr. Baker is not here to-day—he saw the horse the day before it was sold in the market.

Mr. Platt:—You say the horse was stiff all round: was it as if he was in *buckram* all round? [Laughter.] Witness:—He appeared stiff all round—he was afraid to put his foot down. I drove the horse to Braintree long after the lameness was discovered.

Robert Richer, examined by Mr. Thesiger:—I am groom to plaintiff, and have been accustomed to horses all my life. I recollect this horse—Mr. Wilkin came with it to our stable in April. I was about to get on to try it, and Mr. Wilkin said he would not have his horse rattled about the stones by any man, but his man might ride him up the street, and he did so. It would not have hurt a good horse to trot him over the stones. My master came to the stable and said if it was sound and quiet that was all he wanted. Defendant said it was sound and quiet. It was put into the gig with a high dashing board, and Mr. Wilkin said, “I shall drive my own horse of course.” My master sat on the low seat, and they walked down the street. In about twenty minutes they returned, and the horse was put into the stable. The next day I rode the horse to Lexden, two miles. I went gently over the stones and then trotted, and I found he went stiff behind; he also went tenderly over the stones with his fore feet. I thought he might be stiff from hunting, and I walked him and then tried him again, but still found him stiff. The same afternoon I went with my master to West Bergholt, and we found it “dotted” and went lame all the way. It was trotted before Mr. Garrett, and he said it was decidedly lame. On the second or third day after a groom named Fox saw it. On the 8th of June I took the horse to Mr. Wilkin, but he said he would not take it in; and he added, if Mr. Saxty chose to give £10 more than the horse was worth, or £10 more than any body else, it was nothing to him. I rode the horse back from Tolleshunt D’Arcy, and he was lame then; I have seen it in the Shannon coach, and he still went lame as before—he did not shew his lameness when walking.

Cross-examined by Mr. Platt:—Mr. Saxty has had five different horses in six years. One fell down with my master, who understands the shopboard better than horses. [Laughter.] Defendant gave me half-a-crown when this horse was bought. I know defendant’s servant, and am quite sure I did not

tell him I had not the proper money given for it. When my master told me what he gave for the horse I thought it was too much.

The letter of the 2d of May from the plaintiff to defendant, and the other letters on the subject, were put in and read.

James Fox, examined by Mr. Chambers:—I am groom to Mr. Taylor, of Colchester, next door to Mr. Saxty. On the 22d of April I saw this horse at the stables, but did not notice any thing as he walked. On the 3d he was saddled, and the groom trotted him up and down, when I said he was lame in the hind leg. I afterwards saw it trotting in the Shannon coach, and it went lame; the hock appeared to be lame.

Cross-examined by Mr. Platt:—That hock was the largest.

William Garrett, examined by Mr. Thesiger:—I am a farmer, at West Bergholt, and know the plaintiff. I remember this horse being brought to me on the 29th of April by Mr. Saxty, jun. and the servant; he was driven about, and I saw that he was lame of the near hind leg; he went very lame. I thought the hock was a little thick on the inside. A horse that is spavined will go better when it gets warm than before. On the 29th of April I was not told the horse was thought to be lame, but was left to form my own opinion.

Cross-examined by Mr. Platt:—I was requested to see whether it was a horse that would suit Mr. Saxty. I believed this was a blood spavin—there are bone spavins. I did not put my hand on the leg, though that will enable a person to discover a spavin.

William Cross, examined by Mr. Chambers:—I am a veterinary surgeon, and have been in practice fifteen years; I am a member of the College. On the 7th of June I examined the horse, and discovered an enlargement in the near hock, which was a bone spavin. I saw the horse walked; there was a little stiffness in the walk, and when trotted he went lame. No doubt the spavin had been existing several months. Very likely the lameness had existed two or three months. It also went very “feeling” on the fore feet, and on examination I found a contraction of the two fore feet, which would take a long time to cure. I examined the horse again on the 15th, and this confirmed my opinion. A bone spavin had been coming on seven or eight months, and the contraction of the feet for twelve months.

Cross-examined by Mr. Platt:—A bone spavin is an ossification. It is an enlargement of the bone. This was about the size of a small walnut. The spavin extended to the joint. Very possibly the horse would do coach work.

Samuel S. Baker, examined by Mr. Thesiger:—I am a veterinary surgeon, and a member of the College. I was brought up to it. I examined this horse on the 15th of June, at D’Arcy, and found an enlargement inside the hock, which I call a bone spavin. I should say it must have been some months coming. The fore feet were contracted, which must have been a work of some time. It was an unsound horse.

Cross-examined by Mr. Platt:—A blood spavin never ends in a bone spavin—they are totally different. The substance was about as large as a walnut, but did not lie very high. I was not told before I looked that the horse had a spavin; I was of opinion that there was a spavin springing on the other leg.

Re-examined:—A bone spavin and a blood spavin do not present the same appearances to the eye. They are in different places.

Ebenezer Ward, examined by Mr. Chambers.—I am a veterinary surgeon, and have been in practice seventeen years. I examined the horse on the 24th of June, and saw him trot. He was quite lame in the near hind leg, and went feebly and infirm on his fore legs, like an old man. [Laughter.] I found a bone spavin on the hind leg, which could not have been less than two or three months in forming. That was decidedly an unsoundness. I found

contraction in the fore feet, which had been forming six or eight months. Certainly that spavin was not curable. I saw the horse when worked in the Shannon, and he was then running lame.

Cross-examined by Mr. Platt:—The hocks were naturally badly formed. Any thing producing inflammatory action will produce spavin, and contraction may be produced by hard work and bad shoeing. No one who is a judge of a horse could mistake a bone for a blood spavin.

Win. Lewis, examined by Mr. Thesiger:—I am a veterinary surgeon, and examined this horse on the 25th of June; I found it lame in the hock from a bone spavin, which must have been forming six or eight months. The fore feet were contracted.

James Conway, examined by Mr. Chambers:—I was groom to Mr. Hawkins, of Colchester, and am so to his son; I have been in their service twenty years. On the 28th of July I saw the horse at my master's stables. We tried it, and it did not go very well. The near hock was larger than the other. We kept it for a day, and it was sent back to Mr. Garrett.

Mr. Dawson, auctioneer, proved that he sold the horse for £21: the expenses were £2..0s.6d. He examined the horse, and thought he saw the appearance of a spavin in the near hind leg. It was sold without a warranty, with all faults.

Mr. Platt submitted that there was a variance in the contract as laid in the declaration and as proved. The declaration said it was for a sum of money; here it was for a sum of money and a pair of trousers. [Laughter.]

The Learned Judge over-ruled the objection.

Mr. Platt then addressed the jury for defendant, observing, that he had felt some dismay at the tailor's mounting a horse fifteen hands and a half high, when, perhaps, he had never before elevated himself higher than the shopboard. [Laughter.] Here was this person aspiring to have a fine animal, and he bought this hunter; but, with an eye to business, he would not buy it unless the seller would take something in kind, and therefore fitted him with a pair of breeches. Fifty-five pounds and a pair of breeches was a high price for a hunter that had gone through two seasons; and, perhaps, the opinion of his friends that he had given too much for it might have indisposed him to keep the horse.

The learned gentleman then proceeded to read the letters which passed, and to comment on them. In one of his letters he said, "The horse has made some terrible mistakes; what am I to do?" He had got this terrible high horse—almost as big as an elephant—and he did not know what to do with it—"What am I to do?" [Laughter.]—"He is all I could wish, except that which is the *main*." What did the man mean—the *mane* of the horse? Did he mean to say the legs were all right—that the tail flowed well and the *mane* was wrong. [Laughter.] It was clear that the poor man was so terrified with this horse that he did not know what he did. The defendant's first note quieted the poor tailor for a time, but seventeen days afterwards he wrote again, and it appeared it was not till the 20th of May that he discovered for a certainty that the horse was lame. But doctors disagreed, and it would be shewn that the animal was perfectly sound, and was sound at this hour. The defendant had the horse eighteen months, and he never went an hour lame during that time. A bone spavin was generally the cause of lameness, but every horse was not formed in the same way. A spavin was formed out of a diseased state of ossification, generally caused by some violence or over-exertion, and which would produce inflammation: but in some horses the bone would naturally protrude more, and then there was no unsoundness. They would observe the phrase which Mr. Dawson had used—he said he thought he saw the appearance of a spavin. He was a gentleman of great experience in horses;

he had frequently had his attention called to the diseases of horses; he had seen a great number spavined; he brought no astute and cunning science to find defects where no defects existed; and to his experience he (Mr. P.) should have bowed if he had placed his hand on the leg and had said there was decidedly a spavin. But he did not say that. Could any one tell how many veterinary surgeons had been employed by Mr. Saxty to examine the horse. If he had employed twenty, and four only gave an opinion in his favour, that four only would be there. He (Mr. P.) had one gentleman who had been employed to look at it, and he said there was no spavin—there was no unsoundness; and he had not been called by the plaintiff. Was that dealing fairly with the jury?

It now became necessary to give them the history of this horse. It belonged to Mr. Strowger, surgeon of Coggeshall, who, in October 1840, sold it to Mr. Woodward, for the present defendant, for £42. Defendant used him for his own riding till the — of May, 1842; on that day this ambitious tailor took a liking to him, and offered £55 and a pair of trousers for him: and defendant, tempted by this offer, sold him, warranting him sound and quiet in harness. At the time he was sold to defendant he was sound and quiet, and till he sold him to the plaintiff he remained completely so; but on the 25th of June he was sold in Colehester market without a character, which was like giving him a bad character.

Mr. Thesiger put in a bill in which it was described as quiet to ride and drive.

Mr. Platt said, if it was “dotty” it might be too quiet. [Laughter.] It was bought for £21 by a person named Batt; and Garrod, who horsed the Shannon coach, gave him two guineas for his bargain. Now Garrod was a person not to be taken in, for he was a veterinary surgeon himself. Having bought him, he run him three months in the Shannon coach on a hilly road, and it could be proved by the coachman that he never went lame during the whole of that time. At the end of that time Garrod sold him to Mr. Gurdon, a gentleman in Norfolk, for £38; it had been used in his carriage, and the coachman would tell them he was perfectly sound. Yet they were to be hoodwinked by this statement of a rising on the hook, one of the witnesses telling them it was a blood spavin, which was as different from a bone spavin as a walking-stick was from a broom-stick. He contended that it was the form of the bone of the animal itself, and not a spavin produced by ossified matter. He should now call his witnesses before them, and shew that all the time before the tailor had the horse, and after he had it, it was perfectly sound; and could they come to any other conclusion than that the horse, at the time it was sold to him, was a sound as well as a quiet going one? If they were of that opinion he should be entitled to their verdict.

Mr. Woodward, examined by Mr. Rodwell:—I remember, in 1840, purchasing the horse of Mr. Strowger for £42; I was acquainted with the horse, and I thought him perfectly sound. I saw the horse used by defendant, and he appeared perfectly sound. While he had it I, ten or fifteen times, offered money for the horse.

Cross-examined by Mr. Thesiger:—I do not hunt; defendant does. He is my cousin. I do not recollect whether Mr. Strowger warranted the horse to me. I do not know that I felt the leg. I think I saw the horse at the latter end of March, three or four weeks before plaintiff bought it; I did not then examine it, but I saw it rode out of the yard.

Re-examined:—I never saw it go lame.

A. Garrod, examined by Mr. Platt:—I am a veterinary surgeon at Colchester. I saw the horse put up for sale and examined him; it was sound. I

did not bid ; it was knocked down to Mr. Batt, of Stratford ; I asked what he gave for it, and he said he would take two guineas for the bargain ; I gave it him, and paid Mr. Dawson for it. I put the horse in the Shannon coach as leader, and I have driven him in single harness ; certainly he did not go lame. I have driven it above forty miles in a gig ; I did so the day before I sold it to Mr. Gurdon for £38. The animal was sound when I sold him ; he tried him a month and then paid for him. My servant drove it seventy miles in one day. I observed a large appearance on the hock, which results from a kick, and does not in the slightest degree interfere with the action of the horse ; it is below where a spavin commences. Once the horse came up in the coach lame, and I found a nail in his foot. He only lost that day all the time I had him, and never afterwards went lame.

Cross-examined by Mr. Chambers :—I was a veterinary surgeon before I was a coachman. Before that I was a tanner. I had known the horse before I bought it ; I have seen Mr. Wilkin hunting with it. I saw it while Saxty had it. I never said to young Saxty while he was riding, “ You have got a three-legged one there—he can’t get his legs out.” I did make the observation one day, that it did not go like mine. I said so because it was not a fast horse. The mark of the kick is a little below the hock, and there is an enlargement of the bone, but not half the size of a walnut : it is about as big as a nut. I usually drove it about nine or ten miles an hour.

Lawrence Otway, examined by Mr. Rodwell :—I am a veterinary surgeon at Tolleshunt D’Arcy. I attend defendant’s horses, and knew this while he had it, but I never attended it. I have seen it frequently walking and trotting, and I think it was perfectly sound while he had it. A week before it was sold I saw him, and it was then sound.

Cross-examined by Mr. Thesiger :—I was never called on to examine the horse, but I had noticed it being a remarkably fine one.

W. Baker, examined by Mr. Platt :—I am a veterinary surgeon at Dedham. I was called on on the 23d by Mr. Saxty to examine the horse, and I did so fully. I was going to send for a smith to take the shoes off, but he said there was no need of that, there were no corns. I found it perfectly safe. Mr. Saxty said the horse rolled and reached a little behind, and I told him that did not constitute unsoundness. I trotted it and found it perfectly sound. Mr. Saxty did not seem pleased at this. I found the fore feet had no contraction, and I told Mr. Saxty and Mr. Turner so. I was paid a guinea for the examination by Mr. Saxty.

Cross-examined by Mr. Thesiger :—My attention was called to a stiffness in the hind legs, and I said that was caused by the way in which the rein was held by the boy. There was a slight enlargement of the near off leg ; enlargement and spavin are the same thing in my estimation. There was an enlargement of bone, whether from a kick or something else. I am brother to Mr. Garrod.

Re-examined :—I have been in extensive practice nearly forty years. In my judgment, the enlargement of the hock which I saw would not interfere with the action of the horse ; it might be natural. There was not the slightest lameness.

George Whale, examined by Mr. Rodwell :—I am coachman of the Shannon, and recollect this horse being put to it, and I drove it seven miles every day. It is a hilly stage, and if a horse was unsound that would detect it. I never knew it lame except when he picked up a nail in the road. He did his work well.

Cross-examined by Mr. Thesiger :—I recollect Mr. Maud, who was on the coach, observing that it went lame. I did not say “ It goes dotty, and has gone so ever since we have had him : ” I swear that.

Re-examined:—I was appointed by Mr. J. Nelson and the other proprietors as driver.

John Allsebrook, examined by Mr. Platt:—I am groom to Mr. Gurdon; I recollect his buying a horse of Mr. Garrod, which we have rode and drove in double-harness; I have rode it as postillion. It is not lame, and never has been till the other day, when he was kicked by another horse. He always went perfectly sound, and did his work well; I have driven him fourteen miles on a heavy road, and back the next day, and he then appeared as well as before. There was nothing the matter with his feet.

Cross-examined by Mr. Thesiger:—Mr. Gurdon has had the horse about five months. There is a slight place on the hock, but nothing to cause lameness. It is a showy and valuable horse. There is not the least contraction of the fore feet. He is not a very fast horse, but he will go ten miles an hour.

This was the defendant's case.

The plaintiff then called witnesses in contradiction.

J. Saxty, jun., examined by Mr. Thesiger:—I recollect Mr. Garrod overtaking me, when I was on the horse, and saying I had got a three-legged horse, and it could not go like his.

William Jemmett Maude, examined by Mr. Thesiger:—I live at Langham, and am a county magistrate. On the last day of the July assize I was on the Shannon, and observed to Whale that the near leader was lame. He said it was lame at times—I am not sure he said "dotty," but he said lame or "dotty."

Cross-examined by Mr. Platt:—Plaintiff in August told me he was going to law about the horse, and then I told him what Whale stated.

Mr. Platt addressed the jury on this evidence, called in contradiction, and was followed by Mr. Thesiger.

Mr. Justice Patteson said, it was clear the defendant did warrant the horse, and the real question between the parties was, Whether the horse was sound? It was impossible to reconcile the evidence on both sides. On one side or the other some must have stated what they knew to be false—he did not say which it was, but that was for the jury to decide. It was attempted to be shewn that the horse was not lame in the Shannon coach, or at Mr. Gurdon's; and, therefore, was only lame while in the possession of the plaintiff. That could not be true. If they found that the horse really was lame soon after it came into his possession, the conclusion would be that it had a spavin. The evidence was contradictory; but they must look to it, and make up their minds for themselves which they would believe.

The jury, after a brief consultation, found for the plaintiff—Damages £38..18s.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from page 172.]

GLANDERS.

GLANDERS is supposed to be the same complaint as farcy, but attacking a part of greater consequence from the contiguity of membranes and bones in the head.

What led to this opinion was the frequent termination of one disease in the other. This has been still farther supported by inoculating a sound horse with the matter taken from the ulcer of a farcied one, and the result was glanders. It is remarkable that the only part of the sound animal that will receive the infection is the nostrils, where the matter must be introduced. Farcy is not so contagious as is supposed.

An argument in favour of these diseases arising from the same proximate cause, is the result of a very common experiment at the Veterinary College—introducing the blood of a farcied horse into the circulation of a sound one. Glanders will thus be very speedily produced.

It therefore appears that the matter from ulcers of the absorbents is peculiar and only affects absorbents. Thus, in long-continued and occult farcy, the matter is absorbed into the system, and the absorbents of the head become affected, and glanders is produced: and if farcied blood is introduced into the circulation of a sound horse, the absorbents of the membrane lining the nostrils being more irritable than those on the surface of the skin, they become first diseased.

Very fortunately this inveterate malady is not so frequent in this climate as in England. This variation may be occasioned, in some measure, by the mildness of the climate compared with that of England, also from the irritable membrane of the nostrils not being in this country exposed to the saline and acrid exhalations arising from confined and foul stables.

It also frequently arises from tedious glandular swellings of the throat improperly treated; also, from inflammation of the membranes of the nostrils and windpipe from cold.

It may be first discovered by the edge of the nostrils being tight, contracted, and giving the animal great pain when handled; the membrane lining the nostrils being much inflamed, and generally covered with small ulcers. The glands under the throat swell, the eyes will frequently appear full, a very fœtid

matter will discharge from the nostrils, and the whole head appears diseased. In other points the animal may enjoy good health for a considerable time, his appetite and condition will be good, and he will perform his work without distress: great care is, however, particularly necessary, as the contagion proceeding from this disease is found to be very inveterate and diffusible.

He should be picketed a considerable distance from other horses, and never in such a situation that his grass may be blown by the wind to others, as the smallest particles of matter existing on grass which he has slightly breathed on will produce infection.

If the horse is of little value, it would certainly be most prudent to destroy him; but if he is a favourite animal, and as a cure is sometimes performed when taken in a recent state, I shall advise that treatment which is most likely to succeed.

Hot fomentations around his throat may be used twice a-day, of *Mergosia* leaves in boiling water, or of hot vinegar in which crude sal ammoniac has been dissolved in the porportion of one drachm to a pint.

The following may also be used once or twice a-day, placed in such a manner as to act as a vapour bath to his head:—

Take of boiling vinegar one pint, a small bundle of roseberry, or five or six drops of its essential oil; mix, and place it under his head, that he may receive the vapour.

The nostrils should be frequently washed, and the ulcers touched by a feather dipped in the following:—Take of vinegar two table spoonful, honey one table spoonful, tincture of myrrh, one table spoonful; mix, &c.

If the animal's condition will allow, four quarts of blood may be taken from him, and the same course of stimulant and tonic boluses is recommended as in the farcy.

If the disease does not give way in two or three months, the matter will probably have extended from the membranes to the bones, and produce rotten ulcers, which are incurable.

SECTION 4.—OF THE BRAIN AND NERVES.

The brain is divided into two parts,—the cerebrum, which is inferior in the horse; and the cerebellum, superior. It is also composed of two different substances: the external, called cortical, is of grey colour, and dense; while the interior is white, soft, and termed medulla.

The superior part of the brain, called cerebellum, is continued down the back-bone, and takes the name of spinal marrow, which supplies with nerves the greatest part of the trunk of the body and inferior extremities; while the inferior part of the brain,

called cerebrum, furnishes the head, neck, and part of the breast.

Nerves are small bundles of cylindrical tubes, terminating in every sensible part of the body, the functions of which are to produce motion and convey sensation to the brain, from which they all originate. I believe the cerebrum, as in the human subject, furnishes ten pair of nerves, which supply the head, as the optic, which convey the sense of vision, the olfactory the sense of smell; others the sense of hearing, taste, &c. Branches are also supplied to the windpipe, throat, heart, and breast, and which, from their frequent communication, produce that sympathy which is observed: for example, acrid substances received by the nose will produce sneezing, which is an affection of the chest, and is in consequence of the same nerve which supplies the nostrils also sending branches to the midriff. They usually accompany the bloodvessels and spread over the most minute part of the body.

The spinal marrow, I believe, produces thirty pair of nerves, as in the human subject, for the supply of sensation and motion to the trunk of the body and inferior extremities.

The mode by which sensation is conveyed from the various parts of the body to the brain with such inconceivable rapidity has excited the astonishment, and afforded much speculation to the philosophers of every age. Some imagined it to be the effect of vibration, as their course is straighter than the bloodvessels; others, with more propriety, attributed it to their circulating some very subtle fluid, which, by experiments that have since been made, is, I believe, satisfactorily attested: yet many difficulties exist, as no cavities have been discovered by the finest glasses. It is possible the larger animals, as the camel or elephant, possessing larger nerves, might afford an easier scope for investigating this point, although I think it very probable that nerves may circulate or conduct subtle fluid without possessing any cavities.

The recent discovery of elastic fluids has thrown some light on this wonderful property of nerves, and may, possibly, lead to more satisfactory explanations. I before mentioned that some curious experiments had proved that they circulated a fluid (*vide Cheselden's Anatomy*), which fluid must be the medium of that wonderful and inconceivable velocity by which sensation is conveyed to the brain, as is observed when any substance is touched at the extremities at the same instant the impulse is received on the brain. Nothing but the electric fluid is known that could possibly possess this rapid conveyance, which opinion is rendered still more plausible by that celebrated and indefatigable anatomist, Mr. John Hunter, who discovered that the torpedo derives

its power from the nerves being very numerous and distributed principally on the surface of the body.

Still further experiments have been proved to illustrate this very interesting theory. Professor Galvani, of Bologna, has discovered a certain influence or connexion between the loadstone and the animal fibre. D. Girtaner imagined the nervous fluid to be inflammable air; his words are "reflecting upon the result of several of my experiments, I begin to suppose that hydrogenic air, which remains after the oxygen of the water is united to the irritable fibre, may serve to supply the loss of nervous fluid, or, in other words, I suppose that the nervous fluid is the hydrogenic air, perhaps carbonic hydrogenic gas. I confess this is only a conjecture which I am not yet able to prove, but which appears to me very probable. Be this, however, as it may, it is very certain that water is decomposed and re-composed continually in organized bodies: this is clear from experiments I shall hereafter enumerate." Another property, similar to that of galvanism, (perhaps the same) is discovered, or asserted to be so, by Perkins, of America, who pretends that a certain metallic composition has a considerable influence on the animal frame, and removes superficial inflammations. I have had an opportunity of seeing and examining several persons who have been the subjects of these "metallic tractors," and am, in consequence, inclined to believe it possible they may have some virtue. I must, however, acknowledge that Perkins affords ample scope for prejudice in making the requisite combination of metals (if a combination of metals is requisite) a secret or nostrum.

It would thus appear that the nerves circulate a certain subtle fluid, very much resembling and being, perhaps, the electric, which, if proved, will account for the velocity by which sensation is conveyed: the principles of fire, light, electricity, the magnetic and nervous fluid are but little known. Future observations and researches may, perhaps, prove them but various combinations or modifications of the same principle.

LOCKED JAW.

The nerves in the horse are subject to a dangerous disease termed locked jaw, improperly so called, as it is only a local symptom, while the disease is general. Conceiving the jaws to be the chief seat of disease, it was supposed that death occurred from want of nourishment; but this is not the case: the animal positively dies from morbid irritation, or an increased action of the nerves exhausting the system.

It is more frequent in hot climates than in cold. It sometimes succeeds violent exercise, slight wounds in a bad habit, or which

have been negligently treated, particularly if punctured wounds ; also after operations, even when every thing appears doing well ; and it frequently attacks without any violent predisposing cause. The pricking of a shoe nail will frequently be attended with loss of appetite and a rough coat, which, if not timely remedied, is sometimes succeeded by a locked jaw.

The general symptoms are an increased irritability of the senses, as sight, hearing, smell, &c. The muscles of the whole body are contracted, the head is drawn back, the animal points his nose upwards, his flanks shrink up almost to the spine, the eyes are drawn within their sockets, the pulse is quick, and the jaw more or less locked. Internally these symptoms are reversed, for in the stomach and bowels there is scarcely any irritability left, consequently the action of medicine will be proportionably less.

Relief is seldom procured in this disease, and the only probability of it must depend on stimuli internally employed. Mr. Coleman thinks it proceeds from increased irritation, and mentions his having made trial of almost every medicine, and that in opium alone he has sometimes succeeded. If increased irritability is the cause, opium should first be administered in small doses, and gradually increased as follows :—Take two drachms of opium, dissolve it in half a pint of hot water, and pour it down the throat by means of a horn. This should be repeated every four hours, doubling the quantity of opium each time, until the dose contains an ounce, and this should be continued until symptoms of relaxation in the system appeared. Clysters may also be injected of the following :—

Take of camphor two drachms, triturate it in a mortar with about a table-spoonful of sugar, then add, gradually, of boiling water two pints, and tincture of opium four ounces. This may be injected when the beforementioned draught is given, first adding two quarts of cold water to give more bulk to the clyster.

The quantity of opium recommended may appear very great ; but when it is considered that the stomach and intestines have nearly lost their sensation, nothing but violent and penetrating ingredients will have any effect. As our only hope is in opium, and as even opium does not always make an impression on the system, it must be obvious that a union of powerful medicines is alone likely to succeed. Heat is prejudicial, the animal should be therefore kept in a cool place, and without clothes.

The horse seldom survives more than a few days in this state, as the brain becomes exhausted.

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ON THE PAVEMENT OF ROADS AND STABLES.

By Mr. W. PERCIVALL, V.S. First Life Guards.

LEST the question should be raised, "What have veterinary surgeons to do with roads and pavements," I think it proper to preface any observations I may have to make on the subject with the remark, that, as roads and pavements must necessarily have considerable influence on "the wear and tear" of horses' feet and legs, and as veterinary surgeons, from the nature of their avocation, are supposed to ride and drive about as much as any men, and a great deal more than men in general, they are not only concerned about such affairs, but are as capable, perhaps, as most men, of giving sound opinions about them. And since the men of Saint Mary-le-bone, and of other sainted and non-sainted parishes in the metropolis, have had their say, and the job-masters and omnibus-proprietors have enjoyed theirs, we deem it but fair play that *we* should now be permitted to have our say.

The nature of the surface upon which horses are required habitually to stand or tread, or upon which they perform all or the greater part of their work, seems, so far as the animal's foot is concerned, only second in importance even to the shoe itself. Whether a horse stands or works upon a hard or upon a yielding surface, upon a level or an uneven one, or upon a slanting one, must, in the course of time, produce alterations in the form or structure of the foot, and not in the foot alone but in the joints and sinews of the leg as well, and consequently must have more or less effect on the "wear" of such parts—on their durability.

Although it is my intention to make wood pavement the especial subject of attention on the present occasion, yet, to enable me to speak comparatively of its good and bad qualities, I purpose extending my observations to other kinds of pavement and roads, not omitting one which, though formerly the most common in London streets, is fast disappearing, to the regret of nobody I should think, before the march of modern improvement:

—I mean the old pebble or cobble pavement. Constituted of a succession of smooth spheroid prominences, variable in magnitude and most irregularly disposed, with interstices between them, too often from wear or neglect of repair become dangerous holes, it forms altogether, perhaps, one of the worst pavements any description of road horses can be made to go upon. In acts of exertion their iron shoes are eternally sliding about, losing their foot-holds or pivots of progression; and when the pebbles are dry and polished by wear, so dangerously slippery are their surfaces rendered, that were it not for the interstices, or rather the holes, horses could not work at all upon such pavement.

Granite, from being cut into pieces of definite size and shape, and so admitting of being laid down in a more regular and uniform manner, has become for purposes of paving incomparably preferable to pebbles: indeed, by suitable preparation and precision in laying down, so excellent a pavement is to be made of it, that even at the present day it is extremely doubtful in my mind whether it has yet been superseded. Heretofore, two grand faults have been committed in laying down granite pavement: the foundation has not been rendered sufficiently secure, and the blocks of stone have been too large. I will not go so far as to say, that the foundation should be one of concrete, but I must insist upon the necessity of its being *rammed* to a degree to preclude all chance of its giving way: also by cutting the stone into *small* instead of large pieces—the best shape for which seems to be the flat oblong—more evenness and uniformity is given to the surface, more stability and durability to the pavement, while the risk of slipping upon it is considerably diminished. Indeed, as I said before, it is by no means certain that, with all our boasted “improvements,” on the construction of metropolitan paved streets and roads, we have as yet discovered any thing superior or even equivalent to a well-constituted granite pavement.

M’Adam did the community good service when he directed their attention to the art of road-making. Prior to the publication of his instructions on the subject, good materials were oftentimes thrown together in that promiscuous and unscientific manner that it was a mere matter of chance whether a good or a bad road resulted. Nothing can demonstrate the truth of this better than the present state of the broad and open thoroughfares at the west end of town, the squares, the parks, the promenades, and the several high roads leading from the metropolis into the country, in many of which pavement has been converted into Macadamization: for the busy thoroughfares of the city, however, and for streets whose narrowness and secludedness

shuts them out from the rays of the sun, as well as from all but occasional and partial currents of air, Macadamization was never adapted, or, I presume, intended.

For the modern introduction of wood in place of stone, as a material for paving, there appears such an all-but mania in most of our metropolitan parishes, that it may be regarded, perhaps, as little short of heresy in me to set up any opinion unfavourable to it: I cannot, however, help thinking, with all this host in support of it, that ere many years elapse we shall find ourselves riding again upon granite in many situations where nowadays the inhabitants are glorying in their noiseless wood pavement. I say, "noiseless;" for so far as the shopkeepers and others resident in the streets are concerned, the noise created by the stone pavements appears to be the great and crying objection to them. And, certainly, a formidable objection this is, and one, perhaps, that ought to and will continue the use of wood in many localities, where stand churches, public schools, &c. &c.; though other considerations may, and I think ultimately will, cause the eradication of it from streets in general, at least from such as are much used as public thoroughfares.

Hitherto, however, the public have heard only the opinions of the inhabitants of the streets concerning wood pavements; and though to such opinions we are all implicitly bound to pay respect and attention, seeing that the inhabitants are the people who are to pay for such alterations and "improvement," yet is there another class of persons to whom we are bound to listen, inasmuch as it is their property, together with the lives of the public, which are incurring greater risk by this said "improvement" becoming, in the language of the Insurance Office, "doubly hazardous." At a meeting of job-masters and omnibus proprietors, held on the 23d March last, it was stated by the chairman, Mr. Gray, of Earl-street, Blackfriars, that petitions had been presented to the Court of Sewers of London, and to the Vestry of St. Mary-le-bone, signed by ninety job-masters and eighty-one omnibus proprietors, deprecating wood-pavement as "highly dangerous and destructive to their valuable property, and offering to prove that the accidents on wood pavement exceeded those on granite or Macadamized roads as *ten to one*;" and it was stated in addition, that, in consequence of this "dangerous and destructive" condition of the streets, they had given instructions to their servants to avoid, in driving about in town, all streets paved with wood*.

After the experience that has been had, I should not imagine

* Since this was written I have been informed that Mr. Wimbush is a dissident from these opinions of his professional *confrères*.

there exists any *horseman*, in the habit of riding or driving up and down London streets, who will not confess that wood pavement presents a surface a great deal more slippery than either granite or Macadamization, and that, for such reason, it is justly accounted “dangerous;” indeed, it is this property of slipperiness that appears to constitute, in the eyes of horse-people, the whole and sole objection to it. Were that removed, wood pavement, one would think, must be regarded by them rather as a boon than otherwise. There must, necessarily, be less concussion upon wood than upon stone pavement; and, consequently, less wear and tear of feet and legs, and certainly less wear of horse-shoes. Can any thing be done by way of remedy for, or counter-active against, this slipperiness—either to the pavement itself or to the shoe of the horse? The notches or grooves which have been cut upon the surfaces of the wooden blocks appear to have had some, but insufficient, effect. They speedily get filled up with mud or dirt; and this, in wet weather, so far from diminishing, appears to increase the slipperiness. Some wood pavements are more slippery than others, depending upon the form and size of the blocks, their separate or united condition when laid down, their arrangement, &c. One of the firmest and least slippery of them that I have seen is that constituted of hexagonal blocks. Were the pavements kept swept clean, free from any coating of mud—which, after all, seems to be the slipping material or medium—there cannot be a doubt but that the evil would be greatly lessened; indeed, this has been tried and found well to answer, particularly when the sweeping has been followed by a sprinkling of fine gravel or coal-ashes; but the expense attending this procedure requiring diurnal repetition, appears to have operated as an insuperable objection to it.

We are not yet, however, left without hope of something being invented which will enable horses to go upon wood without slipping. I see by the public papers that there is a patent taken out, called “Perring’s Patent,” for a plan of paving with wood, which, besides other advantages, possesses the super-eminent one of completely obviating all slipperiness and consequent danger; the mode of effecting this desirable object being by the introduction of interstitial pieces of wood between the blocks of two inches less depth than the blocks themselves, and thereby “giving the horse a fulcrum at every third step, and complete security in his movements*.” It would be great presumption in me to offer an opinion on a pavement I have never seen; but, from the description given of it in the papers, I can-

* See *The Morning Post* for Friday, April 14th.

not help imagining that the surface seems not likely to afford for horses' feet and legs—and surely these are things that ought to be considered—the most proper or agreeable tread they can have.

Supposing the projectors and admirers of wood pavements fail in divesting them of their slippery properties, and that the inhabitants of the streets are unwilling to bear the expense of any undertaking which, it is admitted, would prove a remedy for the evil, veterinarians and farriers appear called on to devise some alteration in shoeing that may tend either to diminish or counteract the tendency of the horse to slip. Naturally enough, we resort to the same means we are in the habit of employing for the prevention of slipping in frosty weather. Although frost-nails, however, might carry a horse ten or even twenty miles along the road with safety, everybody knows that, by that time, their heads would be worn down, and no longer serviceable as stops or checks against slipping. Caulkings will wear down likewise, but nothing like in the same rapid manner; and though they are liable to objections on account of the elevated and unnatural position in which they throw the foot in the standing posture, still, under all the circumstances of the case, I cannot help viewing them, when made broad and square, and not too high, as the best contrivances we can adopt for the prevention of slipping, for horses in general, working upon London streets, and particularly for horses employed in heavy and laborious draught. Mr. Friend, V.S., Walsall, some time ago, sent me for trial a shoe of this description, with the addition of a piece of sole-leather extending across the heels of the shoe, to which it was affixed by two rivets upon either side, and reaching forward enough to cover about two-thirds of the frog; the advantages presented by it being a broader and firmer, and consequently less objectionable, standing for the fore foot, a saving of the wear of the caulking, and a surer means of saving the horse from slipping. This seems to be all that the farrier's art has hitherto accomplished, and all, probably, that is likely to be done, if, as our present opinion inclines, before many years have elapsed we shall see the wood pavements replaced by granite, but by granite better prepared and more scientifically laid down than has hitherto been the case.

Along with the improvements that are making in the pavement of streets and the construction of roads, we cannot deny that stables have evinced signs of amelioration in their flooring, though the progress towards amendment has neither been so rapid nor so general as we could have desired. Such favourites are our horses with us, that our earnest wish is that their abodes should be

both comfortable and wholesome; and one great means of rendering them so will be obtained by paying attention to the pavement of stables. Some persons may estimate it at trifling importance, whether a horse stands or lies upon a hard or a soft surface, a rough or a smooth one, a wet or a dry one; but all horse-people well know that these are considerations upon which not merely the comfort of the animal in a measure depends, but, likewise, his state of health and condition. Every man must admit that it is better for a horse to stand upon a level than upon an uneven surface; upon a soft or a yielding one, than upon a flinty hard one; upon a dry rather than upon a wet one. The most objectionable of paving materials for stables, as it is for streets or roads, is the pebble or cobble stone: hard and cold and slippery, and full of inequalities and holes, it harbours numberless reservoirs for urinous and fæculent matters, whose vapours prove a constant source of contamination of the atmosphere; while the unevenness, and slipperiness of the standing it affords the horse cannot fail in time to prove injurious to his legs and feet. But it is a cheap pavement—it costs so much per square foot less than granite or brick or wood—and it is a durable one; and on these accounts, as in public streets so in large stables, wherein cavalry or coach or agricultural horses are kept, it is the one commonly preferred. No private individual, however, who has the smallest pride in seeing his stable clean and pure, and his horse comfortable, should think of having a pebble flooring to it.

Nothing forms a more level and cleaner flooring for stables than brick-on-edge; but the objections made to it are the expense, and the soft or friable nature of the common brick. Formerly, Dutch clinkers were in general use for paving stables; and most excellent in every respect they were for the purpose. But, nowadays, for some reason or other, a genuine Dutch clinker—a clinker of that metallic hardness and durability as those of former days possessed—is not to be obtained. And, again, modern bricks are as inferior to those manufactured by our forefathers, as the clinkers are unlike what they ought to be: so that, in fact, although brick-on-edge must be highly approved as a material for paving stables, it is one, of a suitable quality at least, hardly in these days of degeneracy and cheapness to be “for love or money” any where purchased. The stables and stable-yards of the Pavilion at Brighton are all paved with brick-on-edge: the brick is a red one, and from its date of manufacture, as well as from the circumstance of its having been made for the King’s stables, is, no doubt, of a hard and substantial character. The stables formerly attached to Carlton House, now belonging to the Queen Dowager, are paved with

Dutch clinkers; but they are such clinkers as I should very much doubt the possibility of getting at the present day. The clinkers manufactured in this country are apt to be deficient in hardness or toughness; and are consequently friable, and little better than common bricks.

Granite has long since been introduced into stables, as forming a preferable flooring to pebbles; and has recently, by being cut into pieces shaped like, and not much larger than, bricks, been very successfully employed as a substitute for brick-on-edge. Granite is probably quite or nearly as durable as the clinker, and possesses the advantage of being obtainable in a genuine state: the only circumstances requiring particular attention being the cutting of it into blocks of proper shape and size, and the laying of them down, after the manner of brick-on-edge, upon a solid and secure foundation, in a bed of concrete, which serves to fix them in their places; and, by uniting the whole, by grouting, into one solid structure, invests the flooring with the strength of a sort of decumbent wall. The best specimen I have seen of this description of pavement was shewn to me by Mr. Braby, in one of his stables at Barclay and Perkins' brewery.

Wood, in a variety of forms, has been used as a pavement for stables. Broad planks have been laid down lengthwise in the stalls, after a plan much practised and extolled in America, though this has been found open to the objections which prevail so much against the asphalte or bituminous compositions; viz., that, while the surface continues wet, it is dangerously slippery. On several occasions horses have slipped up upon asphalte pavements in their stalls, and, in two instances that have come to my knowledge, have broken their legs.

The preferable mode of laying down wood appears to be in blocks, or rather a short sort of piles. Some cut the blocks in squares; others, in hexagonal shapes; while others again regard their form as altogether immaterial, or, indeed, prefer them varying in shape and size, so long as they tally with one another in length. It appears of advantage that the wooden blocks should be placed upon concrete, and grouted together with it; though there are those who contend that, providing the foundation be properly made and rammed, no concrete is necessary.

Lastly, I must not omit to mention that, among other innovations of the kind I am speaking of, *caoutchouc* has been proposed, and in one instance laid down, as a pavement for stables. The report made to me of it was a favourable one. The surface had a pleasant sort of elastic sensation to the tread, was not slippery, resisted moisture, and proved even more economical in respect to the consumption of straw than wood; and, withal,

was a pavement of great promise of durability, and one whose cost, though above that of any of the ordinary floorings, was not so excessive as to preclude persons taking a pride in their stables from adopting it.

AN ESSAY ON SHOEING.

Read by Mr. JAMES TURNER, of Regent-street, at the Meeting of the Veterinary Medical Association, on Dec. 13, 1842.

Mr. President and Gentlemen,

A VERY able paper on the Principles and Practice of Shoeing having been read before this Association by Mr. James Rowe so recently as the summer of the present year, and its merits having caused much valuable information to be elicited upon this very important subject in the course of an adjourned debate, I present myself at this time before you upon Horse Shoeing with much diffidence, and more particularly as I do not pretend to have come arrayed in any of the charms of novelty. The inducement to me for renewing this subject is the advantage likely to accrue to the profession at large by provoking further discussion within the walls of the National Institution, by which, in all probability, we shall be favoured with the opinions of the professors themselves, as to what are deemed by them palpable and practical improvements in the shoeing of horses which may have been brought usefully to bear in the best forges of this metropolis during the last ten or twelve years. But if science has extended everywhere except to the foot of the horse, and that no new and great principles have been brought beneficially and practically to bear in the carrying out of this most useful, indispensable, and in these kingdoms universal art, then I doubt not but that those able gentlemen will fearlessly say so, and not shrink from their duty.

Mr. President and Gentlemen, I beg further to suggest, in order that we may concentrate as much as possible the time and attention of the meeting, that the discussion be limited to the subject of practical shoeing as it relates to the general preservation of the feet of horses engaged in active work upon the road, field, or pavements.

Shoes in variety for diseased feet, or for those of peculiar conformation, may form an ample and highly interesting subject for some future evening. Having served several apprenticeships in the shoeing of horses, commencing at the age of eighteen in the capacity of veterinary surgeon in the army, then in a hunting

country and large posting town, and lastly in this metropolis, I flatter myself that all sorts of improvements, real or imaginary, as they have arisen from their inventors in town or country, have, early or late, crossed my path.

Plodding and mechanical as this subject may seem to the casual observer, it is, in truth, invested with a something peculiarly exciting in the mind's eye of a real horseman. Many times and oft have I seen first-rate intellects assiduously tax their ingenuity to the utmost stretch; yet they have been compelled to abandon their object, always at the upshot discovering the wear and tear to be incompatible with any complexity of the iron shield.

Although veterinary writers, ancient and modern, of one accord have declared it a thing impossible to invent a shoe to be suitable for all kinds of feet, nevertheless it occurred to me, some time ago, that an important desideratum would be that description of horseshoe which combined within itself the greatest possible amount of the several excellencies of other shoes, and, therefore, I determined on doing my best in making an approach to it.

After many repeated changes, and every variety of experiment, at length I became enamoured of one particular form beyond others, proved it by all the known tests, and now propose to designate it the UNILATERAL CONSERVATIVE SHOE for the generality of feet, at every description of work, hunting, coaching, the road, and town, but especially designed to *obviate slipping upon wood pavement*. And I avail myself of this opportunity of inviting veterinary surgeons of Her Majesty's cavalry, and also of the Honourable East India Company's service, to put my shoe to the severest possible tests of military discipline which they can devise.

We are in the habit of regarding the horse-shoeing of our forefathers as rude and unscientific; but it is due to the old school to observe, that one or two of our great leading principles were theirs. The seated shoe of the present day is, at least, a century old: *vide* Osmer. This at once shews that the ancients were familiar with that important function of the foot in quick motion, *the descent of the sole*, and for which, in the concave surface opposite the sole, they made ample provision; not being contented with avoiding actual contact between the shoe and the sole, but excavating from the shoe the space for a pecker; and, unquestionably, momentary extension of the elastic fibres of the hoof frequently occurs, when, if the shoe only merely cleared the sole without this *chambering*, lameness, temporary or permanent, would result. I regard this, viz. the support of the shoe by the crust, as the first great principle in shoeing applicable and indispensable to every description of foot—the avoidance of wounding

the sensitive foot with the nail not requiring comment at this place. Notwithstanding the whims and caprices in horse-shoeing that have prevailed from generation to generation, this salutary practice has never been out of fashion—never discarded. It remains to this day the shoe of the city, and prevails at all the most extensive and scientific forges at the west end.

The next in importance, as one of the great principles in shoeing, consists in a scientific distribution of the nails for affixing the shoe to the foot—(I am not alluding to the avoidance of pricking the quick)—I mean the guarding against that most insidious and more crying evil, the imprisonment of the elastic foot within a rigid fetter by the conjoint effects of bar-iron and nails.

You will suppose, Gentlemen, that I am about to touch upon the present prevailing practice of *side-nailing*. Of such paramount importance do I consider it, that I fearlessly assert before this audience, and the whole body of the profession, that, in applying the shoe, the quick having been avoided by the nails, and the sole freed from pressure in its descent by a concave shoe, the “unilateral nailing” not only stands first as the great conservative or grand principle in horse-shoeing, but that all the others are secondary or tributary to it. How are you to derive the full expansive benefit of that important agency, *frog pressure*, if you have fixed the *heels* by opposing rivets, as in common shoeing? The horny sole may descend in the old common nailing, under the combined impressions of rapid motion, the animal’s weight, and that of his rider, upon a resisting M’Adam’s surface: but mark you, Gentlemen, my question is, Can it, for a continuance, descend *enough* after you have fixed the quarters so as to preserve the delicate organization of the interior from *concussion*? Does its descent even approach to what it would be in the unfettered unshod foot?

The *fetter* of the nails by the old system of shoeing, in driving them as near to the points of the heels, for security’s sake, as that shallow part of the crust would admit of, although sound and rational upon the principles of carpentry, is the most serious outrage that shoeing has ever inflicted upon the internal foot; and it is as insidious as it is mischievous, never manifesting itself until deeply rooted. But when a flagrant error is committed by shoeing in any other way, the animal returns lame immediately from the forge, or gives decided indications of uneasiness within two or three days. It has been well remarked by my brother, Mr. Thomas Turner, for a series of years, that the very first *indication of contraction* is an altered direction of the external fibres of the wall, by their gradually losing their natural obliquity and approaching a perpendicular: and a most important index this is, in obscure

and doubtful cases, as to the precise seat of pain and lameness. Our patient being dumb, where is the experienced practitioner who has not occasionally felt this embarrassment?

Another great principle of shoeing is *frog pressure*; that never-ending bone of contention!

My experience has at length convinced me that a good sound frog can bear almost any amount of pressure, when habituated to it, at its *base* or posterior part—that portion which is placed behind the coffin and navicular bones; while, on the other hand, I have frequently found only moderate pressure upon the apex or toe of the frog a fruitful source of lameness when no suspicion before has ever attached itself to that part.

These observations apply more particularly to a peculiar conformation of foot with which we are all familiar, where the point of the frog appears to dip at the ground surface, or unnaturally project.

Points of support of the ground surface of the shoe.—Upon this division of the shoeing art I am impressed with strong feelings of gratitude being due to practitioners on the continent, more particularly the French. *I allude to the incurvated toe of the shoe*, and I consider the sloping of the ground surface of the heels quite as much called for to facilitate the natural rotating motion of the foot, and more especially to screen the points of the heels from concussion upon unyielding surfaces at a rapid pace. Also, when the horse is in a standing posture, he enjoys a firm level basis of support upon the centre of his foot, while daylight can be seen between the toe and the ground, and between the points of the heels and the ground. The slope or bevel of the inner heel may be more lengthy than the outer, and thereby, in conjunction with side nailing, corns will be prevented, or, if in existence, they will gradually disappear.

The sloped heels have the further advantage of favouring the due amount of frog pressure at its base, while the extra substance of the nailed rim of the shoe has a tendency to preserve the apex or point of the frog from undue pressure. The tapering off of the heels is considered indispensable to every hunter's fore shoe, for the avoidance of the overreach of the hind foot. With a sound foot, the outside heel of the shoe needs not project in any degree beyond the hoof where the crust and bar form a junction; and the inner heel may safely terminate a trifle short of the extreme point of the heel. Nicety of execution is required here on the part of the *fireman*, as the shorter the heel the less the leverage, and, therefore, the greater security of the shoe from suction in deep ground. I take occasion to repeat my firm conviction that

two clips are indispensable accompaniments to the unilateral shoe for security, whether for the road or the field. A clip of considerable size let in at the centre of the toe, where there is always abundance, if not superabundance of horn, is very important, and it safely permits of upwards of an inch of horn to be left unnailed at this part: the other clip upon the outside quarter, acting as more than a substitute for a nail, needs not to be quite so large; but whether small or large, it is perfectly harmless.

For the security of the shoe, it is the bounden duty of the fireman to punch the outside heel nail-hole as near to the heel of the shoe as may be found compatible with the substance of crust which is to receive the nail at that part, remembering that the wall generally diminishes in thickness as it approaches the heel. I need scarcely remark that this back nail cannot be deemed a *fetter*, as there exists no antagonist to it on the opposite side, or other half of the shoe. Shortness of time and space permits me only to glance at three or four of the great leading principles in the practice of shoeing. The subordinate points, which are contributory to the perfect execution of this extensive and most useful branch of mechanics, are too numerous for even mentioning. I must, however, here remark, that the triumph of the side-nailing during the last ten years, as a grand principle of horse-shoeing, owes its success with the public to its extreme simplicity, *being self-acting and cheap*. Yet I have to declare my conviction that it is rarely carried to perfection, either in the forges of town or country. Although the simplicity of the principle constitutes one of its chief excellencies, not only are the very best materials indispensable, but the fireman, or fitter-out, must possess that certain amount of experience of every variety of hoof which has never yet been accumulated in the head of a youngster, however expert he may prove in all his manipulations.

Ergo:—a fireman in the prime of life:

Ergo again:—liberal remuneration as a necessary sequence.

Paring of the foot to receive the shoe is a department safe in a young doorman's hands, the extent of it being invariably regulated by the discretion of the fireman or fitter-out. Before an audience like the present much detail in reference to this would savour of dictation.

I would briefly say that I hold the frog sacred from the knife, except its rags or loose portions; also the sole, except its flakes or exfoliations. The crust to be freely lowered with the rasp, toe and heels, when it can *well* afford it; but when unusually scanty from slow growth or any other cause, it is the duty of the fireman to punch a shoe especially for the individual foot, that the door-

man may be enabled to pitch his nails into sound portions of crust. The bars to remain untouched, except their exfoliations.

It is a bad practice to rasp the surface of the crust or wall above the row of clenches, for the sake of a smart appearance.

Gentlemen, gratified as I feel by the favour of the presence of the talented Professors and Lecturers of this Institution, my gratification is greatly enhanced by beholding also such an assemblage of private practitioners of sterling worth; and therefore in the presence of minds such as a Percivall, Field, and others, I beg you will understand that I purposely abstain from descanting upon all the great principles *seriatim*; feeling assured that, in the course of debate, the void will be filled to an overflow by the more valuable united lore of the profession at large. Practical horse-shoeing being a subject of great national importance, I submit that it is the bounden duty of every member present, versed in this branch of our art, to join in debate for the express purpose of inquiring into and eliciting what are in truth the few great leading principles, or points, observed in shoeing at the best forges at the present day in town and country.

The analysis is most easy. It cannot possibly extend beyond half a dozen points. Suppose we say, for the first time, that there are six great articles, or cardinal points, to be observed. While it must be remembered that there are subordinate advantages indispensable to the perfect execution of the work which are countless, all of them important, the practical artificer is the individual most familiar with these minor appliances, but the veterinarian, his employer, ought also to be acquainted with them *seriatim*.

The discussion is imperative upon us at this juncture. Principles and practice of shoeing having become a hackneyed phrase, *we ought not to separate* without determining what those principles are by which we are to be guided in successful shoeing. Farriers have flourished in Britain ever since William the Conqueror's day, and, doubtless, they were wise in their generation; at all events, we of the present day have eagerly availed ourselves of all they knew, and have now been pluming ourselves under the style and distinction of Veterinarians exactly half a century, pursuing the same occupation under all the advantages of education and scientific guidance.

Therefore, I contend it is a duty we owe to posterity,—I mean to the veterinarians in prospective of 1942,—to record, by this debate within the walls of the parent Institution, the “why and the wherefore” of good and bad shoeing; taking any individual horse upon his return from the forge, he being *well* or *ill* shod, as the case may be. I ask, have we ever yet in conclave during the course of the half century rightly understood one another, or

even attempted to settle this knotty point?—if not, it is now high time. There exists a more urgent demand; the public *claim* it as a *right*, and more especially now that they hear we aspire to honorary preferment from the legislature, with the endowments of privileges and the blessings of immunities.

A CASE OF RUPTURE OF THE SUSPENSORY LIGAMENT IN A HEIFER; AND, ALSO, ONE OF DROPPING AFTER CALVING.

By Mr. JOHN YOUNGHUSBAND, V.S., Greystoke, Cumberland.

THE first case that I would offer to your notice is that of a fine four-year-old heifer, whose hind leg became entangled in a conduit or drain adjoining the straw-yard, from which it was not released without difficulty, and, at the same time, leaving a large gaping wound midway between the pastern and hock, large enough to admit of my two fingers, and from which the blood flowed profusely.

On examining the wound, I found, what I suspected—the cow being down at the time—a complete rupture of the suspensory ligament; which, on the animal being got up and placing her foot on the ground, allowed of the toes being turned quite upwards. I immediately told the owner that I considered the case as one of those that would require a good deal of time to accomplish a cure, and, after all, perhaps, terminate in disappointment. However, I set to work, and the first step I took was to well cleanse the wound from all foreign substances by washing it with warm water in which a little alum had been dissolved, that materially assisted in stopping the hæmorrhage. The next step was to remove all the ragged and loose flesh from the edges of the wound, so as to allow of their being brought into direct apposition, and there fixed by sutures. I then applied a broad calico bandage, a few yards in length, so as to keep it as steady as I could. After having thus secured the wound, my next thought was, by what means I could secure the foot and leg so as to keep them in a situation to let the ligament have fair chance of reuniting. This I did by getting a strong iron plate manufactured so as to take in the whole foot; from which a projection was formed of the same material, and made so long and rather concave, that it reached from the back part of the heel along the pastern and up to the hock. After being nailed to the foot, the leg, &c., was placed in a right position, and there retained by three leathern

straps well stuffed and passed through loop-holes in the iron ; any vacancies being filled with tow, in order to hinder the fretting of the plate. The cow was now allowed to make what use of it she thought proper ; and, to our great satisfaction, we found that she could stand tolerably well upon it, and that, if all went right, it would answer our purpose. I now gave her a gentle dose of physic, and ordered frequent fomentations of warm water, &c., for the first few days, by means of which the swelling was kept quite low. There was not one unfavourable symptom, but the wound supplicated favourably, granulation took place rapidly, and in one month from the time of the wound being inflicted it was healed. After two weeks more she was able to use it with a facility that could scarcely have been thought possible, and, altogether contrary to the expectation of those who saw her at the time of the accident, leaving only a little thickening of the integuments to mark the situation of the wound.

The next case I shall offer is that of **PUERPERAL FEVER**, or Dropping after Calving ; a term in nowise proper in my opinion, but, being generally adopted, I have used it.

March 21, 1843, I was requested to attend a cow that had calved on the preceding evening while travelling along the road towards the residence of the owner. He told me that he feared it would be a case of milk-fever—a common name for that disease in my part of the country—as she appeared very uneasy, continually shifting her posture, stamping with her feet, turning her head towards her sides, &c., likewise her milk having suddenly stopped. She gave her usual quantity in the morning ; but at noon, when the disease was suspected, none could be obtained.

When I arrived I found the cow down, pressing steadily on her abdomen, her head turned towards her right side, and to which situation she again immediately placed it after it had been removed. There did not appear to be that degree of fever generally described, but the eyes were sunk in their orbit and had a glassy appearance, with a total insensibility to light, or even the touch of the finger ; in fine, she was in a complete comatose state, with a pulse scarcely perceptible. My first proceeding was to bleed (of the propriety of which, however, I have some doubt) ; after that I administered a small quantity of warm water from a bottle, for I had some doubt whether she could swallow : she, however, swallowed it, but with some difficulty. I then prepared a strong purging drench, composed of mag. sulph. et ol. croton., mixed up in two quarts of thin gruel, and added to the mixture a portion of ol. lini., which I administered with some difficulty, as the powers of deglutition were now much impaired.

I now left her to visit another patient, saying I would call again in the evening, ordering her to be well littered up and kept warm. About eight hours afterwards I saw her again, and remaining in exactly the same position, not having, so far as we observed, moved in the least, nor had there been any evacuation from the bowels. I gave another dose of physic, but without the ol. croton., and left her for the night, not doubting that before morning she would be dead : but, to my surprise, the owner sent to inform me on the next morning that she was in nearly the same state as when I left her, and that I had better visit her again. Accordingly I went, and found her as described, and quite as incapable of moving as before, except that she would sometimes stretch out her head and neck, at the same time laying them flat upon the ground, moaning sadly.

I now determined to try what effect stimulants would have, and prepared a draught composed of ginger, gentian, lyttæ, carbonate of ammonia, with spirit of nitrous æther, which I administered in warm ale. I also applied a strong stimulating liniment along the whole course of the spine, had her well clothed and bedded up, &c., and prepared another dose of medicine to be given eight hours afterwards, soon after which time I appointed to call again.

On my next visit I was surprised to find that my patient could hold up her head. Her eye had gained a more lively appearance, closing when any thing passed near. The pulse was considerably improved ; her extremities warm ; and there was hope that she might yet weather the storm.

I gave another dose of the medicine ; renewed the liniment to the spine ; clothed her up, and went to rest awhile. In the course of an hour we visited her again, when we found that she had considerably bettered her position, turned more on one side, and the countenance having yet more brightened.

Being busily engaged at that time, I was obliged to leave rather sooner than I wished ; but I had scarcely gone a mile ere the owner overtook me, saying the cow had got up and was feeding. He pressed me to go back, which I did, and found her in the state that he had described. She had also passed some fæces of a most offensive odour, and the colour of tar. I now laid bare my arm, having oiled it, &c., and drew from her a great quantity of the same tarry-looking fæces. This seemed to give her great relief. She also yielded a small quantity of milk. From this time her improvement and recovery were rapid, her milk gradually increased, and in a few days she was considered convalescent.

On the eighth day from the recovery of her last illness I was

requested again to visit her, when I found her with all the symptoms of acute pneumonia, attended with a severe diarrhœa, which, in spite of my medical treatment, cut her off in three days: and so ended all my cherished hopes of saving her.

P.S. Perhaps some of your numerous readers may remark that I never used any injection, so useful an adjunct in this disease; but from the position in which the cow fell the rectum protruded so much, and evidently gave so much pain, that we desisted from that which we should otherwise have attempted.

A CASE OF PROTRUSION OF THE UTERUS IN A COW.

By Mr. G. F. MORTON, V.S., Thirsk.

ON Friday morning, the 24th of February last, Mr. Holmes was sent for to see a cow belonging to a neighbouring farmer. He being from home, I went. On my arrival two men were holding a bushel measure with the uterus in it, and which it more than filled; it was very much swollen and discoloured from the length of time—nearly five hours—that it had protruded.

I administered tinct. opii \mathfrak{z} ss, and got her turned on her back and her hind quarters raised. After removing the placenta and the dirt that had accumulated, and washing it first with milk and water and then with a solution of chloride of lime, by great perseverance I got it returned, and retained it in its position by means of strong metallic sutures passed through the lips of the bearing.

The straining still continuing very much, I inserted a seton on the loins, and rubbed in some oil of turpentine. I ordered a man to remain with her that day and night, and at each throe to press against the bearing, for fear of her rupturing the stitches. After administering a pound of sulphate of magnesia—her bowels being rather costive—I ordered linseed gruel to be given, and left her.

4 P.M.—She was still straining a little. I repeated the tinct. opii \mathfrak{z} ss, adding spirit of æther. nit. \mathfrak{z} j. She had eaten some hay and taken some gruel.

25th.—The straining discontinued and the bowels opened. A slight discharge from the uterus and the lips of the bearing. I injected a solution of the chloride of lime into the uterus, and washed the lips of the bearing with the same.

26th.—Going on well. The discharge from the uterus still continues. The solution used as before.

March 2d.—The sutures were removed.

ON PUERPERAL FEVER, OR PARALYSIS.

By Mr. T SARGINSON, V.S., Appleby.

THE name and the nature of the disease designated puerperal fever are, in my opinion, widely at variance. The idea which the term conveys to my mind is that of a disease consequent or supervening upon parturition, and, of course, confined to the female animal, but my experience palpably contradicts this; for I have frequently met with a disease in the male, as well as in the female unconnected with parturition, that presented similar symptoms, and nearly the same appearances after death, with those of puerperal fever during life. So far as my observation has gone in respect to puerperal fever in the human female, there is a perfect dissimilarity between them. Hence I conclude that it is not puerperal fever, but whenever, or under what circumstances soever, it may occur, it is inflammation of the membranes of the spinal cord—primarily of the lumbar portion—proceeding at different times from different causes, and requiring, with some little variation, a uniformity of treatment. I am, then, persuaded that it originally consists of inflammatory action in the lumbar portion of the spinal cord, and consequent paralysis of the posterior extremities; and, not confining itself to this part long, but gradually, and sometimes rapidly, progressing, until it involves the whole of the cerebral substance.

The predisposing cause I imagine to be a degree of contractility disproportionate to that of the circulating fluid; and the exciting cause I apprehend to be irritation in the neighbouring parts. I am speaking now with reference only to the period of calving. I am aware that there are other causes whose influence will produce similar effects. Even after parturition, the fœtus is destined by nature to derive, for awhile, support from its mother, but from another quarter than the uterus, viz. from the udder. Consequently, then, the stream of nervous influence which was distributed to the uterus prior to parturition, ought immediately afterwards to be transferred to the udder. But it may be supposed that the irritation in the uterus and peritoneal membrane set up at this period may have run too far, or continued too long, and have tended to establish inflammatory action in the spinal column, and thus have frustrated the design of nature, by paralyzing the nerves that communicate energy to the secretory vessels of the udder.

When once congestion is established in the ultimate capillaries, it is then that the effect of one cause becomes a concurrent

or a secondary cause: for in exact ratio to the mechanical pressure of the congested vessels on the origin of the nerves there is a loss of contractile force or power of propelling. In addition to this, there is always, at an early period of the disease at least, a partial deprivation of the mechanical means by which the blood in the venous system is chiefly circulated. In a word, it is congestion producing paralysis, and paralysis promoting congestion, until the voluntary motor, animal, and sentient nervous systems are utterly paralysed. It is in this way that I endeavour to account for those cases, too frequently occurring in my practice, and that so rapidly terminate in universal palsy.

Whenever I am solicited to attend any case of disease, I am always anxious to ascertain the symptoms by which that disease was first manifested or recognized; and for this reason, because I consider that I have then a tolerable chance of tracing it to its origin; and when I can discover the fountain, I endeavour to dry it up, that the streams may subside.

The symptoms that first shew the existence of puerperal fever I find to be, when the animal is lying down, an unwillingness to rise; and when standing, a constant shifting of the hind feet. When induced to move, she walks carefully and rather awkwardly, evincing some degree of pain at every step she takes. These symptoms are often speedily succeeded by a sinking of the eye into its socket—an impairment of vision—a swaying motion of the posterior extremities—a pitiful moaning and a total cessation of the secretion of milk. At length she involuntarily falls, unable to rise again. She ceases to ruminate, and usually refuses both food and water. There is little or no excretion per anum, and very little urine voided, and that which is voided is generally high coloured. She throws her head back on her side, and manifests a perfect disregard of surrounding objects.

The disease now generally progresses in defiance of all that can be done to arrest it. Palsy rapidly steals through every nervous fibril, causing a deprivation of sensation and muscular contraction. A foreign substance may be drawn over the ball of the eye without the animal shewing the least degree of pain or inconvenience. Dung and urine, before death, are often voided involuntarily, and even enormous masses of decomposed food will sometimes be ejected from the stomach, especially if much purgative medicine has been given. This process is accompanied by an insufferable stench, and which is very soon succeeded by death.

I imagine that no specific rule can be laid down for the treatment of either this or any other disease, but every system requires the exercise of the judgment, in order to regulate it according

to the modification of the disease and the circumstances under which it occurs. I give the following, then, as a general outline of my treatment of this disease, and it has been as successful in my hands as I could reasonably expect in such an unmanageable malady. How it will answer in the hands of another, should it be tried, I know not.

At the commencement of the disease I almost invariably bleed, and I deplete as far as I dare: but it is too seldom that I have the operation to perform this, for the animal is usually down, and unable to rise, before I am invited to attend.

The first compound I prescribe, in the way of internal medicine, is generally as follows:—℞ Magnes. sulph. ℥xij, pulv. croton. sem. ℥ij, pulv. al. Barb. ℥ss, pulv. zingib. alb. ℥iss. I have these articles made into a drench with gruel, and, at the time of giving, I add sp. æth. nit. ℥ij. After this I dispense the following mixture, three table spoonsful of which I order to be given in a pint of decoction of linseed every two hours:—℞ Tinct. canthar. (L. P.) ℥vj, tinct. croton. ℥j, sp. æth. nit. ℥ij. I have also a soap or turpentine clyster thrown up every four or five hours, and the lumbar portion, and occasionally the whole extent of the spine, well blistered.

When there is apparent affection of the brain, I insert a seton behind each ear.

If, after the expiration of fourteen or sixteen hours, there is no improvement, I usually alter, in some measure, my course of treatment, fancying that a change of medicine is beneficial. I order to be given in a quart of gruel, sodæ chlorid. ℥xij, aloë Barb. ℥vj. I have this followed up, every two hours, by a powder like the following:—℞ Pulv. cascaril. ʒij, pulv. zingib. ʒij, pulv. capsici ℥i, ammon. sesquicarbon. ʒij, and continue this mode of treatment, with occasional alterations, until the case terminates.

As soon as the animal begins to recover, I do not give the stimulants more frequently than two or three times a day. I do not like the system, particularly in this case, of pouring in large and repeated doses of cathartic medicines. A great quantity of purgative medicine may be given without producing the least beneficial effect, unless the stomach can be aroused to action by the agency of stimulants. I am convinced that they actually defeat the accomplishment of the end they are designed to effect. I have not unfrequently met with peritonitis attacking the cow shortly after parturition.

This also is almost uniformly called puerperal fever, although a different disease, and requiring an opposite mode of treatment to the foregoing one. It, in my opinion, more resembles puer-

peral fever in the woman than any other disease, supervening parturition, that I have met with in my practice. Were I inclined to retain the term, it would be this disease, as occurring after calving, that I should designate puerperal fever.

P.S. A communication that appeared in a former number of THE VETERINARIAN, on this subject, has elicited this from me. I respectfully submit it to superior judgment.

THE EFFICACY OF THE MURIATE OF SODA IN THE PRESERVING OF VARIOUS PREPARATIONS.

By Mr. ALEXANDER HENDERSON, V.S., Park-lane.

ON looking over and arranging the morbid and anatomical preparations which I have collected, my attention was particularly drawn to the complete success that has attended the trials I have made with the solution of muriate of soda in preserving various preparations; and it occurred to me that it might be beneficial to the profession at large, if the process were more generally known through the medium of your widely-circulated journal.

The solution of muriate of soda, I believe, was first used for the above purposes by W. Cooke, Esq., F.R.S., who obtained the silver medal of the Society of Arts.

Mr. Cooke says, in his communications to the Society "I have tried the solution on brain, on which it is successful. I have by me large specimens of other parts, as the thoracic viscera of a child, ætat. two years, which has been put up fifteen months; the thoracic and abdominal viscera of a child, ætat. three years, that has been put up seven months, with the placenta, &c.; in all of which (though they have not been accurately closed) the preservation is perfect, and no disagreeable smell is emitted.

It is needless to specify the advantages derivable from the adoption of a solution which costs about 10d. a gallon instead of a spirit which, being somewhat above proof, costs 18s. or 20s., provided its equal efficacy can be established.

To assert the benefits deduced from anatomical investigation, and from the preservation of natural and morbid structures, and the consequent importance of giving the utmost facility to these pursuits, would be an improper intrusion here; yet, perhaps, the extent to which it is intended to vindicate the power of muriate of soda in solution should be distinctly declared.

The muriate of soda, when dissolved in clear water and filtered, constitutes a solution as bright as any can possibly be imagined.

When used a little below saturation, it will preserve animal substances an indefinite period, and at all temperatures and states of the atmosphere.

When animal substances have been properly macerated and put into this solution, that solution will retain its brightness as long as it is excluded from the atmosphere, and will rarely deposit so much precipitate as is done by spirit of wine.

It may be used upon a large scale in vessels less accurately closed ; upon specimens of any bulk for occasional inspection, and for which the costliness and volatility of spirit almost wholly unfits it.

It may be substituted for spirit almost universally ; and there are parts which it preserves in the natural condition which spirit contracts.

The salt used in most of the preparations was that of Philipps Loudon, Esq. ; but some trials recently made justify the assertion that common salt will avail, if the process is conducted in the manner hereafter described.

Mr. Cooke says, that the chief difficulty which presented itself in the manipulations consisted in closing the bottles and the adoption of a body which should be efficient and not liable to chemical action with the muriate. At length glass, with a medium of resin, occurred to me, and proves easy of application, neat, and effectual.

The process is exceedingly simple : it consists in putting animal substances—deprived of their blood by maceration in water—into a saturated solution of muriate of soda, and nearly the whole is comprehended ; yet, as the transparency of the fluid and the permanency of the preservation depend upon some trivial parts of the management, it will be necessary to attend to the following particulars.

Keep a saturated solution of muriate of soda in good spring water, and in every gallon of water dissolve 3lbs. of salt.

The specimens intended for preservation should be macerated in water, and frequently changed, in order to deprive them of the colouring part of the blood. This usually occupies three or four days, or more if the substances are large. Then place them in a solution of salt, kept in a common receptacle, in order to saturate them with the salt ; and, as the water suspended in the animal structure would reduce the strength of the solution, this is counteracted by placing in it a linen bag filled with the muriate. It is kept in a linen bag in order to prevent the foreign matters of the salt from soiling the preparations. At the expiration of a few days they may be transferred from this vessel into that which is to contain them permanently.

The solution in which they are finally to be kept should be a very little below saturation.

Evaporation is much less liable to happen than if spirit is employed ; yet, should it occur from any accident, crystallization would result, unless this precaution were adopted.

It would be well to add about half an ounce of very clean water to a quart of the saturated solution. When the specimens are put into a solution of proper strength, and perfectly transparent, and the parts properly separated to exhibit the different objects it is designed to show, the next point of importance is to close the bottle with accuracy and neatness.

For the reason already stated, glass, with a medium of resin is chosen. Make the rim of the bottle perfectly dry, and spread on it some resin with a common spatula. The glass (previously fitted) is then applied ; and, by holding a warm spatula pretty close to it, the resin softens, and the top is fixed with the utmost accuracy. It is best to conduct the process in a moderately warm room, and the glass should be rather less than the circumference of the ring, or on lifting the bottle by the top, as is very generally done, the glass might be raised.

With small bottles it is sufficient to make the resin smooth, and then varnish it ; but, on bottles of a larger size, additional security is obtained by attaching a slip of bladder round the edge by means of glue.

I shall be most happy to shew any person inclined to inspect them the preparations which I have by me.

THE PATENT SHOE,

Manufactured by Mr. H. B. RODWAY, Birmingham.

[THE VETERINARIAN for April 1843 contained a letter from Mr. Reddall, disapproving of Mr. Rodway's Patent Shoe. Mr. Rodway claims the privilege of a reply. We insert that reply verbatim, and we pass it without comment.—EDIT.]

To the Editors of " The Veterinarian."

Gentlemen,

Birmingham, April 12, 1843.

I MUST beg of you the privilege of defence by replying to a letter appearing in your last number of THE VETERINARIAN from Mr. Reddall, veterinary surgeon, Plymouth, wherein he

comments somewhat freely, and in no tender terms, upon my Patent Concave Horseshoe. I might wish to trespass on your kindness by expressions of pride, that my agent had succeeded in licensing so talented a practitioner as Mr. R., but his "disappointments and feelings" having been of such a character as to render it cruel in me to defer for one moment removing from his mind's eye that veil of obscurity which has so operated upon his physical organs as, by his own admission, to lead him to the destruction of his effects.

We have, however, previously from him the *usual* admission, he did *approve* of the *principle* of my shoes; but he feels disappointed that, on application, they did not, within four or five months, cure some of the evils (beyond his reach) which I had stated would be, by their constant application, *less frequent*. I beg to use this gentleman more tenderly than he appears to do either horse-shoes or horse-corns, by simply calling attention to his hasty decisions and violent operations on other points as well as the shoe in question. Allow me to tell him the shoes he is pleased to name as of my manufacture may have been, for aught I know, as miserably made as those which have lately passed under his process of "beating;" for it so happens, that I have not manufactured shoes till within the last month, and even the patterns sent out have been made by different licensed smiths at their own establishments. I may leave others to judge of the talent of Mr. R. as a shoeing smith, or the attention he pays to the application of shoes in his forge, when he is so far lost to his own interest as publicly to advertise the valuable fact, that, though a shoe be produced presenting precisely the same foot surface as the best description of the usual seated shoe, because the ground surface is not the same he cannot attach it to a "strong sound foot" without in a "single set" producing "corns." This is too gross; a child would tell him there is no difference in the foot surface of the concave and other well-formed shoes, and if he produces corns with one he will with the other. It is somewhat amusing to listen to such nonsense and publication of a man's own stupidity; but be his talents what they may, his powers of vision astonish me; for not only does the gentleman know that *he* produced corns, but he absolutely *saw* them come, they grew so fast. "I have *seen* corns produced, &c." He has seen more than this; he has seen nails break in the neck (good ones, doubtless): perhaps he would kindly tell me the maker's name. He has seen iron and shoes beat up by the same magic influence. An explanation, however, follows; and in spite of all that has preceded it, this is *larned*. He admits the two edges of my shoe receive an equal degree of

pressure, but he is again violent because the inner rim is at a distance from the nails and clinches, and the leverage in consequence becomes so great that the nails break. He does or ought to know that the distance of my inner rim and the inner rim of the common shoe from the nails and clinches are exactly the same. Perhaps he would, however, like, in the use of my shoe, by way of improvement, to drive the nails down hill, bring the clench to the inner rim, and leave the heads of the nails on the top of the hoof—he might get them near enough then—any thing for a change: even from such sources we may learn something. Will he therefore oblige, by telling me (being so clever) how, on two surfaces taking a level bearing, we can obtain the leverage he describes? As a proof of the profound researches and calculations made in the matter, he complains of the expense, while all other persons know that the patent shoe can be made at about one-half the cost of the common one. Happy, indeed, am I to find so able a practitioner has declined so disgraceful an application of that which others are turning so much to their own advantage. The violent hands he laid upon the poor iron and shoes looks vastly like a man breaking his toe in kicking a stone he had the imbecility to fall over. Having shewn himself capable of placing his own blunders to the account of others, I might have had some reason to believe his boasted “sense of justice,” if, thinking he had found a defect, he had written to me on the subject; but no—that would not have answered his purpose, though I had returned him the penny. I shall not now be much surprised to hear from the same quarter that all horses becoming blind, broken-winded, or old, being troubled with sore-throat, or head-ache in all their limbs, having fever in the nose, or pain in the tail, after unsuccessfully bleeding them in the ear, should be pronounced ruined by the shoe, nail, or bellows.

I remain, Gentlemen,

Your obedient and humble servant,

HENRY BARRON RODWAY.

Mr. Rodway, in another letter addressed to ourselves, who had called upon him to favour us with a few of the names of the veterinary surgeons who patronize his shoe, affirms, that his two hundred testimonials have nearly increased to three hundred. “Herewith,” says he, “I beg to hand them to you, and perhaps, as lovers and seekers after truth, you will have the kindness to print them.”

We herewith print the names of the veterinary surgeons, with a short comment as regards one of them:—

Mr. Henderson, veterinary surgeon to the Queen Dowager.
(Mr. Henderson's approbation and use of the patent extends only to the wood pavement and to frosty weather.)

- W. C. Spooner, Southampton
- J. Gibson, Manchester
- Robert Dickson, Brook's-mews, Berkeley-square
- D. Woodin, Upper-place, Dorset-square
- T. Burrell, Great Windmill-street
- Daniel Dunnett, Bury St. Edmunds.

We wish not to enter any farther into the subject. The profession has pretty well come to an understanding with regard to it, and we can better employ ourselves than in quarrelling.—ED.

A CASE OF PUNCTURE IN THE FOOT OF THE HORSE.

By Mr. J. CLAPP, V.S., Park-street, Borough.

SOME time ago my attention was directed to a valuable chaise-mare that had been lamed in the off fore foot two days previous to my seeing her.

On removing the shoe and thinning the sole, which I did until some bleeding took place, I could find nothing that explained the great excitement and lameness that presented itself. The pulse was above 90.

The frog being apparently a sound one, I had not touched it with the knife; but now, thinking it necessary to carry my examination farther, I cleared its surface, and about an inch and a half from the point I discovered a black mark in the frog, and in which was embedded a part of a nail nearly an inch and a half in length, that appeared to have been broken there. After extracting the nail a quantity of black pus followed. I then thinned the whole surface of the foot until it yielded to pressure, scarifying the foot in various directions. I then bled freely from the shoulder, fomented the foot well, and applied a large poultice; and she being prepared, I gave her a brisk dose of physic, turned her into a loose box, and she was not long there before she lay down. In a few days synovia appeared, which was checked by a solution of sulph. of zinc and concentrated acid.

At the expiration of two months, during which she had been well poulticed and bled, although she was much better, she was very far from being sound. The diseased foot was nearly one inch less in circumference than the healthy one.

Thinking this to be an extreme case of the kind, I proposed to the owner the following treatment; namely, to divide the wall of the foot, commencing the incision about an inch from the point of each heel, carrying it down the wall, dividing the insensible sole in the same direction, terminating at the point of the frog, and leaving the frog and bars untouched. A light tip was put on, with a few nails at the toe, so constructed as to allow the frog to touch the ground.

She was again blistered round the coronet, and, in a few days, turned out. In the course of two months from this time she was not only, comparatively speaking, sound, but the bad foot was even wider than the other.

I have employed this treatment successfully in cases where the foot has been run over and contraction commenced.

A CASE OF FRACTURE OF THE POSTERIOR MAXILLA OF A HORSE.

By Mr. GEORGE CLELAND, Rosewell, N. B.

ON November 6, 1836, I was called upon to attend a brown horse thirty years old. He was very subject to staggers, and had been blind nearly ten years, occasioned by over-exertion when young. He was considered to be a first-rate trotter.

In one of his occasional fits of staggers he had tumbled and fallen back on account of the collar giving way, and also the bars which had been placed behind him for safety. None of the servants being at home, he was found, when they arrived, lying behind one of the other horses.

I was immediately sent for. I found his lower jaw-bone broken behind the place where the pulse is felt, and with a large wound below his right eye, on the upper part of the spine of the cheek.

I abstracted a piece of bone from the lower jaw about the size of a half-crown. I then found the fracture to be about nine inches in length, reaching from behind the place of the pulse to the nippers, and I abstracted several other small pieces of bones. His head was swelled to an enormous size, and his pulse 56.

I abstracted a considerable quantity of blood—gave him laxative and fever medicine, and enemata of sulphate of magnesia occasionally. I also applied warm fomentations to his head, and dressed his wound with tincture of benzoin.

In a few days the smell became so offensive that none of the servants would dress his wounds. I injected warm water into the wounds from above downwards, and forced a yellow and bloody matter down the nose to the extent of about half an English pint; I then injected a quantity of the chloride of lime, and, in a short time after, I dressed it with a mixture of turpentine and oil, and continued this treatment, along with laxative and fever medicines, for several weeks, until the discharge dried up. At the expiration of seven weeks the bone was united, and he was discharged. He was fed, by means of the horn, with thin gruel and mashies of bran.

He has never had an attack of staggers to such a considerable degree since he met with the accident as he had before, excepting once, when he had a very severe attack of them. When I have had occasion to fear a return of the staggers, I administer laxative and fever medicines, and enemata of sulphate of magnesia, and have never bled him since his jaw was broken.

A CASE OF TETANUS TREATED WITH BELLADONNA.

By Mr. S. G. HOLMANS, V.S., Ash, Kent.

IN August 1842, my attention was requested to a bay coach-horse, aged, the property of a lady at Margate, that had received a wound upon his stifle occasioned by a kick from another horse. I treated it accordingly, and at the end of three weeks he was put to work apparently perfectly recovered.

Upon his return from work a few days afterwards he was considered to be very ill, and I was again sent for. I found him labouring under that direful malady tetanus.

The symptoms are too well known for me to repeat them here; suffice it to say, that, in this case, they were very marked.

I immediately abstracted four quarts of blood, and administered $\mathfrak{z}\text{j}$ of aloes in solution. I back-raked him, administered enemata, and applied the extract of belladonna along the spine. This I was led to do from having heard it highly extolled in such cases by Professor Spooner, when I was a pupil at the College.

The next day there was no abatement of the symptoms, and in the evening I gave tinct. crotoni $\mathfrak{z}\text{j}$, and again applied the belladonna.

On the following morning the bowels had acted, and there was

evidently an improvement in the symptoms. I repeated the application of the belladonna, and, at the expiration of ten days, I considered the animal to be out of danger.

I have now the satisfaction of seeing him at his accustomed sport, as well as ever.

ACCOUNT OF A RUPTURE OF THE ABOMASUM IN A HEIFER.

By Mr. BAMPFIELD KETTLE, Colyton.

UNDER the impression that a communication of a case of an extraordinary character may prove interesting, I venture to lay before you one which I imagine very rarely occurs.

On the 24th of March, at nine P.M., Messrs. Batstone and Parris, whose pupil I have the honour to be, were requested to attend a fat heifer that had formerly appeared in good health. Six pounds of blood had with difficulty been abstracted before Mr. B. could reach her. He found her down, and whether from inability or disinclination she could not be induced to alter her position. The symptoms were,—pulse quite indistinct at the jaw, and scarcely to be felt at the heart—respiration accelerated—muzzle dry—membrane of the eyes much injected—a discharge of frothy saliva from the mouth—profuse cold perspiration covering the whole body—moaning—extremities very cold—frequently directing her head to her side—and the bowels constipated.

Under so many unfavourable symptoms Mr. Batstone advised her being immediately slaughtered; to which the proprietor objected, observing that her flesh would be of a bad colour and unsaleable, and desired Mr. B. to give her a drench, which he accordingly did, consisting of sulphate of magnesia, and ordered gruel to be given and rugs to be thrown over her.

The farther attention on this case devolved upon myself; and, when I saw her, I found the symptoms before described greatly aggravated, and informed the owner that, from her hopeless state, it would be useless to attempt to do any thing more for her. She survived only a few minutes after our coming to that determination.

Half an hour after death I proceeded to open the cavity of the abdomen. My attention was directed to the lacerated and dirty appearance of the omentum, and to a great quantity of fluid food, which, on examination, I found to proceed from a rupture of the abomasum, on cutting into which the mucous membrane was

found to be highly inflamed, and a circumscribed patch about six inches in circumference, and extending a little from the edges of the rupture, was deeply ulcerated. The mucous lining was completely destroyed.

Was it possible for the exposed muscular fibre to be acted upon by the gastric juice? The stomach was empty, nor could I detect any foreign agent that was likely to be productive of such mischief.

She died enormously fat, shewing that the stomach must have well performed its functions, although disease had made such ravages in some portions of it. The outer coat of the intestines was inflamed. The other organs were healthy.

I have sent the ruptured portion of the stomach for your inspection.

AN ACCOUNT OF THE LATE EPIDEMIC DISEASES AMONG HORSES, CATTLE, SHEEP, AND SWINE.

Compiled by W. YOUATT.

THE EPIDEMIC AMONG CATTLE IN 1840-41.

THE NORTH RIDING OF YORKSHIRE.

[Continued from page 219.]

UPLATHAM, in the North Riding of Yorkshire, about two miles from the sea, is the property of the Earl of Zetland. It is a hilly country. Some part of it is screened and other parts elevated. It is well watered with springs, but there are no ponds or marshes. The soil is high and dry, with the substratum a sandy rock. The cattle, in the pasture where it made its first appearance, had not been connected with any others for a period of three months. It broke out suddenly, when it was previously not known within twenty miles of the place, and no cause apparently indicated or suspected.

The first beast that was infected was a two-year-old steer, and it extended to others of the same age or older, and also to a cow that was not in the adjoining pasture. Those that were fully grown were most liable to be attacked. The first appearance of the disease was generally in the mouth, but there was some

tenderness of the feet at the same time. None of the animals were affected a second time.

The steward of his lordship, Mr. Alderson, used to administer salts, sulphur, ginger, treacle, and, occasionally, nitre, and this was repeated on the fourth or fifth day. If the disease did not yield, more opening medicine was given. At the same time the hoof was examined and pared if necessary, and the mouth was well rubbed with a cloth dipped in vitriol-water. If the cows were in calf, common salt was often given, it being considered, in that country, to be a safer purgative than the others. Not one animal was lost. The secretion of milk was in all cases more or less suspended, and was generally intermixed with purulent matter. The milk might, in the generality of cases, be drunk by the calf without any disease or inconvenience ensuing. When the animal began to recover, her condition was found to be decreased according to the severity or mildness of the attack, but the milch cows always suffered the most.

Mr. Alderson relates that, shortly after the disease in the cattle, three or four horses were affected. There were enlargements about the throat, which it was necessary to open, and which sometimes extended to the legs and feet.

Mr. Rutson, of Kirby-Wicke, in the North Riding, gives an interesting account of the epidemic. His land was flat, moderately wooded and dry, but intersected both by rivers and marshes. His cattle had no direct communication with any others, but were near a public road. The disease first appeared in a heifer out of doors. She was immediately put into a loose box, treated with moderate doses of sulphur and salts, and recovered quickly. One of his tenants, with cattle of all ages, had a two-year-old bull the most severely affected of the whole. None of his cattle were affected a second time. The prevailing opinion in his neighbourhood, and to which he seemed to incline, was, that no medicine should be given, except where the bowels were confined, and then gentle purgatives were administered with advantage. Of the deleterious influence of too much medicine, a marked instance occurred in a large drove of fat cattle passing through this district to the south. A portion of them were placed under medical treatment, and became so reduced as to be driven north again, and sold as lean stock at Yarm fair. The remainder, to whom little or no medicine was given, soon recovered, and were sold as fat cattle.

As to the cause of this complaint Mr. Rutson speaks with proper diffidence. In many cases it occurred suddenly and without any assignable cause. Some of his cattle, after having

been tied up six weeks without any previous indication of mischief, failed. In other cases attempts were made to communicate the disease both to cattle and sheep, particularly to some cows in calf, by putting them together, and also by the food that had been placed before diseased cattle being given to them. He had some black-faced sheep three months, that were selected from a lot bought from a northern fair: they were driven home, and not a single individual became ill, but the remainder fell amiss the very day after they were selected. "In fact," adopting the language of Mr. Rutson, "I could not find any satisfactory account of the cause of the complaint." It was a truly epidemic disease.

Mr. Booth, of Killerby, Catterick, Yorkshire, in a hilly dry situation, screened with belts of plantation, the surface soil loam, the substratum gravel, had his share of the disease. There was no possible communication with other cattle. About a fourth of the number were out of doors—the rest housed. The frost was severe, but the animals were in good condition, and were fed on turnips and straw. The disease commenced with the young cattle, after which it spread indiscriminately. There was loss of appetite, blistered tongue, and stiffness of the limbs. The fat and heavy animals suffered materially in their feet. None were affected a second time. The beasts were fed on turnips and hay, and the medical treatment employed was that recommended by Professor Sewell. No deaths occurred. When the udder was not affected, the milk generally returned in its usual quantity; but when the udder had been diseased or ulcerated, the flow of milk sometimes ceased altogether. The other diseases of cattle retained their usual character. Abortion in one case followed the disease. The malady has not appeared in the feet of sucking animals, nor were there any cutaneous eruptions before or after the disease. From violent attacks of the malady there was often great loss of condition. The usual duration of the disease was about five weeks from the commencement.

Sir Godfrey Webster gives an interesting account of his cattle. His ground at Woolley Park, near Wakefield, is rather flat, yet somewhat elevated—the situation dry and well wooded. It is altogether a healthy locality. His cattle had not been in communication with any others. The disease made its appearance first in a lot of West-Highland heifers, three years old, on the 14th of January 1841. It extended to seven store pigs in the yards,

and about half of the number of cattle were affected. They were out of doors, in good condition, had been running in the park, and during the storm were in a yard upon barley straw. They were evidently losing condition, and forsaking their food. This was three days after their supposed infection. There was disease of the mouth first, and afterwards of the feet; and the oldest cows were the worst, both in the feet and the mouth. In some herds the disease appeared more than once; but it was not so violent in the second attack.

Their food was chiefly linseed cakes until they could crop the grass. Their mouths were rubbed with common salt, and costiveness was obviated by gentle aperient medicines—principally Epsom salts. A solution of powdered vitriol in water was applied to the feet.

The number of animals affected by the disease included short-horn cows, heifers, steers, calves of different ages, and three and four-year-old West-Highland heifers. One calf died at a week old, but that was the only animal that was lost.

The quantity of milk was not diminished when the udder was not affected.

Two calves were tried from the milk of the infected cows. One of them died as just stated. The other, a little older, was also attacked, but very soon recovered. Females pregnant, or when suckling their young, seemed equally to participate in the disease, but which seldom or never produced abortion. A few of the in-calf heifers, and some that were in milk, and also several store pigs, were attacked with cutaneous eruptions. The state or condition in which the disease left those who recovered seemed to depend almost entirely on the condition in which they were when first attacked.

ON THE INFLUENCE OF FOOD ON EPIDEMIC DISEASE, AND THE PROPAGATION OF THE DISEASE TO THE HUMAN BEING BY CONTACT.

By W. H. WYETT, Esq., Painswick, Gloucestershire.

Sir,—Perceiving among the queries about the epidemic none specially directed to the possible influence of impure food, such as mildewed turnips or grass, smutty straw or mouldy hay, I am induced to call the attention of the veterinary committee to the similarity of some of the symptoms to those caused by ergot of rye, as noticed by Professor Henslow in his very interesting paper on the diseases of wheat.

The ulcers on the feet and tongue being common to both, and the

feet sloughing off in the one case and the hoofs in the other, are coincidences leading to the suspicion of similarity of cause. We have, also, the general prevalence during the last two years, in many parts of the country, of mildew in its several varieties, with the large quantities of damaged hay, straw, and grain, facts to be traced to the extraordinarily wet summer of 1839.

Although it should be proved that the disease is contagious, still some such cause may have originated it; and there can be little doubt that whatever originates a contagious disease, predisposes also to its reception. I venture to throw out these hints, apprehending that the connexion may escape general observation, unless some more direct query is addressed to the members, and that the committee may have an opportunity of appending one in some future communication. If they have, it might perhaps be desirable also to inquire whether any similar disease has attacked the human subject under circumstances indicative of contagion. I suggest this for the following reason:—

A very respectable and intelligent surgeon, who attends my own family, informs me (indeed his case has come under my own actual observation) that during last November he had examined a number of cattle labouring under the epidemic, particularly a horse, whose mouth he opened; he did not, however, dissect any. On November 26th he saw some very bad cases, though he did not on that day touch them. December 1st he was himself attacked by fever and general constitutional derangement. On the 4th, inflammation at the root of the nails, both of the fingers and toes, came on, which extended to the joints, especially of the fingers. About three or four days after, suppuration ensued, and he lost two finger-nails, one on each hand, preserving the rest with great difficulty. His own impression is, that it was the same disease which is now so general among cattle*.

CONTINUATION OF THE ACCOUNT OF THE EPIDEMICS AMONG CATTLE IN 1840, AND AT THE PRESENT PERIOD.

Mr. Levers, of Richmond, in this Riding, gives the following account of the disease:—

The epidemic first made its appearance among my cattle in August 1840, and was for some time confined to a particular

* I have now the nail of my left fore-finger sloughing off from a sore coming into contact with the diseased mouth of a beast. There was considerable irritative fever accompanying the case.—W. Y.

pasture which was then stinted with fat cattle and sheep, and at that time quite ready for the butcher; but the complaint reduced them to such a degree, that I was under the necessity of keeping them until the Christmas following, before I could get them into the same state of condition.

Subsequent to that, the whole of my cattle and sheep became affected, which numbered about seventy head of cattle and three hundred sheep. I am not aware that my horses were ever attacked.

What was rather singular, I never directly lost any one animal, but indirectly I have been a great sufferer, 1st, From loss of condition, after which it required some months to get the animals into the same state as when they were first attacked. 2dly, From my cows calving prematurely—I had twenty-three that did so in succession—and a very serious loss among my sheep in a similar way; and, 3dly, The greatest part of the animals that were attacked had an evident inroad made in their constitutions, which prevented some of them from ever getting fat; and many others suffered to so great a degree, that I found much difficulty in getting them into any thing like feeding condition.

For some time I persevered in the use of sulphur, Epsom salts, and nitre, with solutions to wash their mouths and feet, consisting of roach alum and blue vitriol, boiled in vinegar; but experience taught me that, in nine cases out of ten, that proceeding was useless. With the exception of a very bad case, I then gave 1 lb or 1½ lb of Epsom salts, varying the quantity according to the age and size of the animal. I adopted the same plan with my sheep, from two to four ounces constituting a dose for each.

I had a great number of both cattle and sheep that lost their hoofs. One cow was down during nine weeks—that took place in the early part of 1841—after which several abscesses formed on different parts of her body, and which it was necessary to puncture. The discharge in some cases was very great.

The following case, as related by Mr. BATES, will be read with peculiar interest.

I have only had one case, a cow; but the epidemic has prevailed in my neighbourhood and adjoining my farm. It appeared on the 26th day of October, 1840, in the parish of Kirkleavington, near Yarm, in the North Riding of Yorkshire. The land was both flat and sloping and the soil clay and a clayey loam; the weather was open, and my cattle had not been in communication with any other.

The above cow, and about twenty more, travelled along a

turnpike-road, between their pasture and the cow-shade, where they were milked twice a-day. On the 19th of October there was a large fair at Yarm, two miles from hence. Many diseased cattle were at the fair; and, as a precaution, we laid lime upon that part of the road where they crossed from their pasture to come to the cow-houses, and did not, for a month after the fair, drive the cows along the road, as previously had been done for nearly a quarter of a mile in length, four times a-day.

The cow was at grass, having calved on October 2d previously; she was five years old, and the dam of the bull-calf that obtained the premium at Cambridge, in 1840.

When brought out of the field to milk—before five o'clock in the morning—she was not perceived to be unwell; but when she returned to the field a glairy fluid was observed to run from her mouth among the grass, which she was unable to bite. She was brought into a house immediately, separate from all other cattle, and there tied up, and kept so for thirty-six days; when, having perfectly recovered, she was put to my Duke bull, and I expect she is again in calf. On opening her mouth the inflammation was evidently very great, affecting her tongue, &c. &c.; in three days her feet became affected, and she was very lame for three days afterwards. There has been no return of the disorder either in this cow or any other.

As soon as the cow was tied up, on the 26th October, she had given to her 1 lb. of Epsom salts, 1 lb. of treacle, 1 oz. of ginger, and 7 oz. of sulphur, in about four quarts of warm water. Her mouth was washed every two hours with a sponge dipped in vinegar in which alum had been dissolved, and this was repeated six times each day for six days afterwards. When her feet became lame, three days after taking the disorder, they were washed with vinegar, in which alum and the blue vitriol of the shops had been dissolved, the whole being made a little more warm. This was repeated every two hours the first day, and during three days afterwards six times a-day.

The drink was never repeated; but every four hours the cow had horned into her plenty of linseed gruel and oatmeal, and four times a-day afterwards for four days. She began to eat cut turnips and a little hay, and in eight days was as perfectly well as ever. Hay and a few turnips were given to her each day, while kept in the house apart from any other stock, and she was not put to the herd of cows for eight weeks.

Her milk was considerably affected, and was kept separate for eight days, until she perfectly recovered.

I attribute the speedy recovery of this cow to the close attention paid to her, and they who went to see her never came near

any other of my cattle. This precaution, and keeping the cow secluded, was the cause of its not spreading among my herd. In all cases near me it went through the whole herd.

The disorder, somewhat abated, is yet said to exist in the district. The milk returned as the cow recovered, and she has done well ever since her recovery.

We will now advert to THE EPIDEMIC OF 1842-3, of which we have received some interesting accounts from the north. The first is a letter from one of Professor Dick's former pupils, Mr. FULTON, of Wigtown.

He says, "About a fortnight ago I was called to a dairy of fifty cows; one had died a week previously, one was lying dead, and another died on the following day. The two last were opened. About two gallons of water were found in the off side of the chest of each of them. The lung on that side was hepatized, firmer than liver, and darker coloured. The pleura was detached by the slightest friction. Both pleuræ were adherent through one-fourth of their extent, and large quantities of coagulable lymph floating in the chest or adhering to the ribs. The near side was not so much diseased, and contained only half the quantity of water. The other viscera were healthy.

"These animals had dropped their calves about a week after their being for the first time observed to be ill, and six weeks before the usual time. In the byre six or eight were coughing occasionally, but the breathing was very little accelerated. They fed, drank, and ruminated, stretched themselves on rising, and had every other symptom of health. The pulse was somewhat oppressed and the horn cold in some, with no perceptible difference in others. I bled those that coughed, and gave a pound each of Epsom salts to the whole, washing the house daily with chloride of lime. These animals also got emetic tartar, digitalis, and nitre; and when the appetite became impaired and the pulse feeble, gentian, ginger, with sweet spirits of nitre; if there was any tendency to premature calving, opium was given. Setons were inserted in the chest and dewlap, and in some cases the sides were blistered. Some I bled four times; others required it only once.

"Every day new ones are coughing, and two more died yesterday; the post-mortem appearances being the same as at first. Ten of them have recovered, some after premature calving, and others without having calved; but they all have cough.

"I have now bled the whole of them, whether coughing or not, but still new cases are occurring. The farm is on the Carse of Cree, lying low, but the cow-house in every way comfortable.

This is the fourth year that a dairy has been on the farm, and it had hitherto done well. The cows are in good condition, and mostly within four to ten weeks of calving. A cow not in calf, and a bullock, are better, but they still cough: the cough, however, was not so severe in them.

“A few lines on the treatment, and any other remarks you may be pleased to make, will confer on me a lasting obligation.”

The following reply was kindly sent by the worthy Professor: it does him the highest credit, and contains an interesting, and faithful account of the present epidemic:—

My dear Sir,—I have heard from various quarters that a disease has been attacking cattle all over England, in which the chest is principally affected, and in the same manner as those you describe.

It is evidently an epizootic depending chiefly on some atmospheric influence, combining with certain peculiarities in the particular localities where it has made its appearance, and partaking much of the nature of the common influenza with which horses have, for a few years back, been frequently attacked.

It appears in cattle, as well as in horses, to present some variety in its symptoms according to the particular organs in the chest which are affected; the greater or less extent of the inflammation, in one part more than another, requiring a modification of treatment according to these circumstances, and to the particular stage in which the disease may chance to be observed, and in which you are called to see it.

From the circumstance of “the pleura being inflamed, coated with lymph, and adhesions having taken place, together with effusion of serum into the chest;” and more especially the pericardium being distended with serum, I am of opinion that the disease is most commonly, if not invariably, in the *first instance*, principally an inflammatory one of the *serous membranes* of the chest, the pleura, and pericardium. This afterwards extends from the *pleura* to the other tissues of the lungs, partly by contiguity and continuity of parts, and also by the increased susceptibility of the lining membrane of the ramifications of the air-passages of the lungs, produced by the action of the same state of the atmosphere as that which operates on the surface of the body, and through it, sympathetically, on the serous membranes. This appears to me to be the nature and progress of the disease in the form you describe: but it is, at the same time, necessary to observe that the disease may extend to the pleura

in particular by commencing in the air-passages. The effusion, however, in the pericardium would not, in that case, be so great, neither would it be so regular as your's appears to be.

If I am correct in the view I have taken of the nature and progress of the disease, I think you will at once perceive why some variety of treatment will be required at particular stages of the malady, and also why, in many cases, the disease must prove fatal, from the progress it has made before aid is called in.

First, it is frequently fatal, because inflammation in the serous membranes, unless checked in the earliest stage, speedily runs on to an effusion of lymph and serum; and this, when it has taken place, instead of being checked or removed by bleeding and the other means necessary and efficacious in preventing it from taking place, is rapidly increased by those very means, and that nearly in proportion to the activity with which they are adopted in the advanced stages of the effusion.

In the second place, as the effusion into the pericardium most commonly proceeds from the inflammation having attacked the portion of that organ which is reflected over the heart (rather than from the inner surface of the *bag*), and almost as a matter of course extends to the substance of the heart itself, the treatment will, in proportion to the degree in which the heart is involved, require a more careful diagnosis, and, at the same time the difficulty of treatment is increased.

In the third place, the difficulty of the treatment will be increased by the inflammation having, at the same time, or nearly so, attacked the bronchi, and afterward extended to the cellular tissue of the lungs.

A disease which is essentially an inflammation attacking organs of so much importance in the animal economy must always be attended with great danger, and this is much increased by the symptoms being, in the early stages, rather obscure, or, at least, not such as are likely to attract the attention of the ordinary attendants on cattle; consequently the disease has generally made considerable progress before the veterinary surgeon is called to the case, who must modify his treatment according to the stage in which he finds the disease, or the particular parts which it has attacked.

The symptoms you mention appear to me to be those of the disease in its advanced stage and more complicated form; but I think you will learn, if you have an opportunity of examining an affected stock, that some of the cattle are a little off their feeding—that their respiration is somewhat restricted—that there is a kind of fixed contraction of the muscles of the abdomen and of the ribs, or the animal has a lank collapsed appearance. The

horns and extremities will be cold, and the pulse will be full, or perhaps, strong and bounding, but not much quicker than natural (allowing for the ordinary increase of frequency in those in the byre above the others in the open yard), or it will be quick, small, hard, and wiry. In some it will be strong at the heart, and feeble in the arteries, but, at the same time, irregular; in other cases it will be oppressed.

In all those cases where there is a full, or strong bounding pulse, the animal must be bled freely, and that bleeding repeated, if necessary, in eight or twelve hours, the quantity to depend on its effect in weakening the pulse. It may, in many cases, require to be again had recourse to, sooner or later, according to the state of the disease, and, generally speaking, the sooner the better, if there is not some evident improvement. Similar steps must be adopted where there is a small, hard, wiry pulse, which is the effect of the advance of the disease in the previous case; but, where there is an irregular or intermittent pulse the animal will not stand the loss of so much blood, as in those cases there is always more or less disease going on in the heart itself, and the abstraction of blood causes increased action in that organ, which, being weakened by disease, is unable to perform this extra duty, and faintness is the consequence: in the first instance, rapid prostration of strength follows, and the animal sinks under the treatment. Such, I think, you will find to be the case with those in which you detected the serum in the pericardium, and where there was no effusion in the chest; in short, in proportion to the degree of affection of the heart you would find the animal less able to stand the loss of blood.

The same remark applies to those cases in which effusion has taken place to any great extent in the chest, even although the lungs or pleuræ may have been the seat of active inflammation previously. Bleeding would now, as already noticed, increase the effusion, and soon destroy life. In all the other forms, especially in the early stage of the disease, bleeding, and that repeated, must be chiefly depended on and boldly adopted.

If the treatment, in regard to bleeding, requires to be varied, according to the nature of the case, as I have already explained, in like manner the medicines to be administered must also differ. When, for instance, the disease is entirely an inflammation of the lungs or the pleura, and where bleeding requires to be adopted with vigour, and repeated, it is evident that the medicines most suited to reduce the strength and frequency of the action of the arterial system will be the most advisable, and these continued until they are both reduced to nearly the natural state, when, if there is much weakness, some tonics—chiefly of the mineral kind—will

be advisable, and may be continued until the strength of the animal has been recovered. In those cases, however, where the heart is chiefly affected, as indicated by a weak, quick, irregular, or intermitting pulse, the same reasons which suggest caution in the abstraction of blood will also shew the impropriety of giving sedative medicines, because such medicines generally produce their effects through the nervous system on the heart, diminishing its power, and inducing weakness, or acting as a kind of poison on that organ, and that at a time when the organ, which, although an involuntary muscle, and with its ordinary action, is not liable to exhaustion, yet in a state of disease it is liable to fatigue, or is, at least, rendered weak and feeble, and unable properly to perform its function, which is that of supplying all the other parts of the body with blood. It is therefore evident, that in those cases in which the heart is the seat of the disease, and also in proportion as that organ is more or less involved even in conjunction with other organs, the treatment must be modified according to the circumstances of the case; and, in some cases, it may be necessary, instead of giving sedatives, to administer tonics, for the purpose of keeping up the strength and tone of the heart, in order that it may be able to go on to perform its functions. For this purpose, it may be necessary not only to give tonics, but even diffusible stimuli, where the powers are likely to give way.

The same remarks are applicable to the other parts of treatment. In those cases where the lungs are chiefly affected, counter-irritants are required; while, in the case of disease of the heart, the use of such means, especially large blisters, are objectionable, because they call on the heart for increased exertion, in order to send the blood to those parts to which blisters or other active irritants are applied.

If, then, I am right in my view of the disease you have described, it is easy to explain its fatal tendency, and at the same time to point out the paramount necessity of great discrimination, and a very frequent attendance of the veterinary surgeon on his patients, and the necessity of his being early applied to.

One of the best tonics in such cases is sulphate of iron, to which camphor may be added, also a proportion of gentian, camomile, or other vegetable tonics. Venice turpentine, or other medicines of a similar class, are also useful, by stimulating the kidneys, but without the sedative effects of digitalis, which medicine may, however, be used with advantage, where the effusion is confined to the chest, or in the early stages of the disease. When, however, sedatives are admissible, I prefer tartar emetic, or antimonial powder with nitre (given after the operation of some

laxative medicine, of which, in such cases, salts are as good as any), and the antimony and nitre continued in full doses twice a-day, until the strength and frequency of the pulse are reduced.

In some cases you will find the carbonate of ammonia a useful tonic, and in others wine, ale, or porter, will be required. When much effusion has taken place in the chest, it will be advisable to try tapping. You will form your diagnosis of the necessity of this by percussion, or the use of the stethoscope, or, what is the same thing, applying the ear to the sides. The other symptoms you have had an opportunity of witnessing, and the operation followed up by the administration of tonics combined with diuretics.

ON THE PRESENT EPIDEMIC AMONG CATTLE.

By Mr. JOSEPH CARLISLE, V.S., Wigton, Cumberland.

My dear Sirs,—Allow me the honour of addressing you on the present epidemic amongst cattle, a disease, from its mortality, of material importance. It has made its appearance in this part of Cumberland, and threatens to be a most formidable pestilence. As sure as the animal is attacked, so sure is its doom sealed. For many a century the nature of epidemics has engaged the inquiry of the medical man and the philosopher, but as yet we remain in a complete cloud of darkness. We may pretend to judge of their origin from the effect which they have on the animal body, and spin out a plausible theory : but how intricate and undefined are our conjectures!—and we have stated almost all we know when we admit that most of the infectious diseases have their origin from some peculiar compositions of gas or gases pervading the atmosphere, or some ærial poisons by which it becomes contaminated, and which are formed, possibly, from the miasmata which have escaped from the bowels of the earth during some volcanic eruption or deeply seated commotion, the result of which is a contagious poison.

We may form a thousand strange conjectures, but I hope the time is not far distant when the real and not speculative causes of epidemic diseases will be practically proved. Then, and not until then, shall we be able to combat and fairly beat this formidable enemy out of the field.

Our epidemics assume singular and unaccountable types. Every new visit presents different symptoms, according to its intensity, or the organ or organs that are attacked or involved : we are, consequently, compelled to vary our treatment according to its nature and the effects produced. We may unanimously agree

that epidemic diseases invariably assume a typhoid character, and we may treat them as such; but from the great uncertainty of success from want of a perfect knowledge of their cause or causes, hundreds of valuable animals are sacrificed before we arrive at any thing like a specific or standard system of treatment, which has ever been a subject, if not of contradiction, yet mere speculative dissertation. We must first look for the origin. A Coleman has immortalized his name by frequent and demonstrative proofs of the general source from which springs that deleterious and fatal poison which operates on the *horse*, and glanders is the result. When truly established, one animal is capable of propagating the same disease to another; and even the human subject claims no exemption.

I have every reason to believe that the origin of the diseases termed epidemic are at first, and, perhaps, long confined to a narrow space in a particular locality, by which a solitary animal or two become affected, and the nature of the disease is of such a kind or type that it is capable of being conveyed to another—hence it becomes epidemical.

Some of our modern and eminent physiologists affirm, but wrongly, that rabies has its origin from the brutality practised on the canine species. The effect produced is nervous irritation, derangement, and alteration of habit, and in some seasons and localities becomes almost epidemical. Now, it cannot be denied that we must have a cause before an effect can be produced. Some attribute the madness to the influence of a radiant sun; but I cannot learn that rabies is more frequent in hotter climes, not even in the torrid zone: there is some natural predisposition in the animals, as they are the general propagators and distributors of the hideous malady. In my opinion, the cause is a limited one; for we seldom hear of a dog going mad but we are able to trace the origin, viz. inoculation.

To return, however, to the present epidemic among cattle. It is of the most fatal kind, and summons every one of the profession to his post. It is our duty to investigate, study, and reflect on the real nature of the disease, and also to lose no time in making our views known to the public.

I cannot think the present epidemic is in the least connected with the previous ones. I have attended a very large stock, the property of an extensive farmer, some distance from this place, and his cattle escaped the murrain, but they that were then exempted have become affected with the present epidemic.

Its first appearance in this country was among some Irish cattle, and one or two of my employers purchased some of the infected

ones, not knowing that any thing was amiss at the time. They were sent off to a pasture on the farm, and in two or three days one of them was observed to be unwell. It was brought home, bled and physicked, but soon died. Little notice was taken of the animal, and his remains unattended to; but in the course of a day or two, two more became ill. They were brought home, and also died. Presently the disease shewed itself among his own stock, that is, the milch cows and others that were tied up on the premises became affected. The owner naturally became alarmed, and it struck him forcibly that some infectious disease had been brought by the Irish cattle. He applied to different cowleeches and veterinary surgeons in the neighbourhood, who pronounced the cattle labouring under the present epidemic. This was in December last, and since that he has lost nearly thirty head of cattle—not more than five or six recovered. They were subjected to various treatment, mostly on the depletive system, but to no avail.

On the 20th of February I was requested to attend, and, as a matter of course, I suggested a different mode of treatment, and for some time great hopes were entertained by the owner that I had hit upon the right path; but, all of a sudden, our hopes were blasted, for the disease was determined to conquer. Two or three died daily for some time. Ten were labouring under the disease when I was first called in, and had been so for some time previously. Some were nearly worn out from debility, and others, apparently, had suffered but little.

I attributed the unfavourable termination to the too free use of the medicine. It had evidently been pushed too far. I was a distance of upwards of twenty miles, and had not an opportunity of correcting its influence until it was too late.

The same treatment was continued, but the medicine modified to the best of my judgment, and every attention paid by the owner that possibly could be, yet the disease proved unconquerable.

I at length suggested, that every diseased animal should be removed from the premises to some distance, and every vessel used by the patients to be set aside; also, the man who attended on the sick was now denied access to the healthy ones. This was done, and the cow-house completely purified. Since that time not one fresh case has presented itself, and I think that the owner may congratulate himself at its departure, although he suffered great loss. He has a large and valuable stock remaining on the premises, and it is my real opinion that, had not this change been effected, its ravages would still have continued; for at the time

it was accomplished two or three were infected daily. This has been practised by two other farmers with the same good effect. Now, if proofs were wanting as to the identity of infection and contagion, this will go far to establish the fact.

A LETTER FROM MR. HOLMES, V.S. ON THE SAME SUBJECT.

My dear Sir,—Since I wrote to you last month respecting the epidemic and its secondary consequences, I have been called upon to attend several stirks (one and two-years old) affected precisely in the same way as the cases of 1840 and 1841, viz. a staring coat, a copious discharge of saliva from the mouth, large vesicles on the tongue, a clicking up and shaking the leg as if pricked by some foreign body, and, afterwards, a breaking out at the feet. In fact, the whole symptoms exhibited might be considered as exactly similar to those of the preceding years; and yet it must be remembered that these young stock were not then in existence.

From what I can hear, as well as from my own observation, I have every reason for supposing that all our young stock seem to exhibit an extreme susceptibility to become affected with this plague, for such it truly is.

The same remark will likewise apply to hogs or yearling sheep. I have not as yet seen any cases among young pigs; but I feel persuaded that they will not be able to escape the contagion. The cloven-footed tribe will again have a general visitation.

The real cause of this pestilence seems to be at present enveloped in doubtful conjecture; and yet, for my part, I cannot avoid thinking that atmospheric influence is a leading agent. The influenza which prevailed to such an extent among the *genus homo*, a few years ago, seemed to me to exhibit the same characteristics as the epidemic or epizootic among stock; and, as the faculty assigned a primary place to atmospheric agency as the cause of the former, so may the latter be regarded as the cause of the present evil.

Although I am not possessed of any preventive means, and do not dare to recommend any thing as a specific, yet I must confess that I think some means may be adopted to alleviate or mitigate the present evil, and thus prevent, in a great measure, the too frequent remains of chronic disease after convalescence has apparently taken place. I am quite sure that the lungs are more or less deteriorated, according as the symptoms are manifested, under good or bad management.

As a proof of this assertion, in some cases of milk-fever and red-water that I attended, I was much surprised to observe the

rapid sinking and speedy death of the animals ; for the life of the poor creatures, without even a single rally, fled, as it were, from them, notwithstanding every possible endeavour was made to preserve vitality. Upon opening them, I was farther astonished to see the havoc made by disease not only on the lungs, but also the liver. *I am doubtful that this summer will see increased fatality in such secondary cases.* Upon inquiry I found that these animals had been seriously affected by the epidemic in 1840 or 1841, and which, like many thousand others, had, in the wise conceit of their owners, been left to the care of chance.

As my experience has matured, I have seen reason for altering, in some degree, a former expressed opinion, namely—In the cases which came under my notice in 1840 and 1841, I considered bleeding then to do more harm than good ; but from the many fatal cases I have since seen, wherein I found the lungs and liver in such a highly diseased and disorganized state, I now am of opinion that, where condition will permit, moderate bleeding, aided by gentle aperients, nauseants, warmth, and quietude, are powerful auxiliaries in producing convalescence, and will also be found great preventives against the chronic congestion of the lungs which is now so very fatally prevalent among those stock where such timely precautions have not been observed. I also consider that, were such or similar precautionary means more generally known, the country at large would be not a little benefitted.

G. HOLMES, V.S.

AN ACCOUNT OF THE EPIZOOTIC DISEASE WHICH PREVAILED IN BESSIN, IN FRANCE, AMONG THE COWS, OXEN, CALVES, SHEEP, AND PIGS, DURING THE YEARS 1840 AND 1841.

By M. LEVIGNY, V.S., Cambes.

It may now be interesting to cross the channel, and trace the history and progress of this disease in France.

During the three last years the merchants in heifers and pigs complained that they daily lost very considerably in the decreased price of the animals which they were conducting to Paris and its environs.

This loss they said was occasioned by a disease known by the name of *the cocotte*, which attacked almost every animal, and prevented them from walking. They were therefore compelled to leave on the road a great many who exhibited symptoms of illness and occasioned considerable expense, and who were afterwards sold at a very inferior price.

It was in the neighbourhood of Pacy-sur-Eure that the flocks usually discovered the first symptoms of *cocotte*, but we were far—says M. Levigny—from foreseeing the extent of the evil. The progress of the epizootic was slow, it is true; but it was continually advancing from the east towards the west. It was a full year in the valley of Auge before it appeared in Bessin; but, having arrived there, the greatest degree of consternation ensued, for the principal part of the riches of the country consisted in their numerous troops of milch cattle. The secretion of milk ceasing, or much diminishing, might prove the perfect ruin of the farmers, who had no resource for the payment of their landlord but the butter which they sent to Paris.

Their fears were increased when the epizootic approached within a few leagues of Bessin. The markets and the fairs for cattle were deserted, no one daring to send them there, either from the fear of not being able to sell them, or lest they might mingle with infected animals.

These precautions, however, were useless. The epizootic at length reached them. It was in the month of May, says M. Levigny, that I had occasion to observe the disease in a cow belonging to M. Enault, of Isigny. I was on horseback when it was driven by. I thought that there was something peculiar about it, and was inclined to imagine that it laboured under some aphthous sporadic disease. Two days afterwards I was requested to examine this cow. I did so attentively, and, remembering the accounts which had been given by the journals of veterinary medicine, I immediately recognized the prevailing epizootic.

The six cows that were with her soon became infected. The bull that had accompanied them, having leaped the ditch, found his way to a herd of fifteen cows, all of whom became in a few days infected by the disease. The proprietor having driven some of these cows to his yard, the contagion was not slow in communicating itself to his pigs, and by means of them four other herds of cows were attacked by the disease.

During the summer of 1840, the epizootic spread itself in the proportion of one in eight. In the autumn the cases were few. The winter presented more; but in the spring of 1841 the invasion of the disease was fearful. It seemed to spare nothing. All that had resisted the epidemic in preceding years was now overthrown. The attack was more fearful every day; and when by chance it spared for a little while a farm or plat of herbage—where there was a number of cattle, it soon attacked and destroyed the greater part of them. At the moment that I write this, I only know five or six farms exempt from this disease, and can count scarcely three hundred horned beasts in more than twenty

thousand which are in the cantons of Balleroy, Trévières, and Isigny.

I think that the epizootic disease, the subject of this report, is the same as that which was described by MM. Geslain, Bernard, Magne, and also by the Council of Health at Paris, &c. Finally, that which has occasionally prevailed in France since the year 1837, reigns there still, as well as in other countries.

I will endeavour to point out several modifications which, probably, are to be attributed to the localities.

A disease almost like that which now occupies us has already appeared in different parts of France, and particularly in the valley of Auge, and several veterinary surgeons, and, among others, M. Huzard, sen., have given a description of it.

A disease also resembling this, although less intense, has prevailed in Paris and its environs during the years 1811, 1812, 1834, and 1835. It has been observed by several veterinary surgeons.

Nothing, however, absolutely nothing, has indicated that any of these diseases have appeared in the Bessin form from time immemorial. The oldest persons have not witnessed it, nor have any of their predecessors recorded it.

Causes.—It is impossible to attribute the epizootic to atmospheric influence, nor to the bad quality of the food, nor even to the locality.

The year 1840 had been cold and dry, the year 1841 cold and damp; and, nevertheless, the disease indistinctly shewed itself in every period of these two years, and in every place. It has been observed raging at the same moment with an equal intensity on the borders of the sea, in the plain, and in the marsh. Rain, snow, drought, calm, and tempests, all seem to favour its development. Progressing sometimes regularly, sometimes irregularly, it can, at certain times, be attributed to contagion, and at others to the epizootics; but oftenest it has appeared without any ostensible cause.

In the cow-houses of one farmer it often happens that the infection is confined to one flock only, and others have escaped for six months, and even a year.

During winter, the cows that were in the farm-yard were probably diseased: but there was no disease in either of the four stables that surrounded it, nor in any of the pasture grounds. At other times it was directly the contrary. In most situations the epizootics began with the cows; but in others it was among the pigs that it raged most, or among the sheep.

The development of this disease is often so singular that many persons will be tempted to deny the contagion, which in other

cases becomes perfectly evident. Who is not constrained to admit the principle of contagion, when in the first diseased herd they see that the cow which infected the others was bought at the fair of Balleroy, and that, before its arrival, there was no disease of the kind in the country, nor for several leagues around? In four days, the whole herd that came in contact with this cow was infected. The bull came in contact with fourteen cows. At the expiration of six days they were all diseased, notwithstanding the precaution taken by the owner of removing every cow the moment she appeared to be unwell. They were conducted to the farm, when they were not long in communicating the disease to the pigs, and also to two other herds of cows.

M. Binet, farmer at Saint-Clément, sent several cows to the fair of Trévières. He brought back only one, and put it with his herd. It was this cow that brought the disease and communicated it to her companions; and it must be remembered, that until this there had not been the slightest trace of infection, either in the commune of Saint-Clément nor in those that surround it.

I could quote many other facts, which all confirm the opinion that this epizootic is contagious.

It happened very often that several troops of oxen and of heifers passed the night together in the same pasture-ground. One troop, perhaps, was found infected; the other was unscathed.

In 1840, almost two hundred horned cattle, of every kind and of every age, were admitted into the marshes of the Cambes. The disease was apparent in some of them in a little time after their being put together. They remained four months together, and yet not a quarter of them were attacked by the malady.

At this very period I have three herds of cattle to fatten. I have taken the greatest care always to put together the last that were bought, in order to avoid, if I could, the disease from falling on those that were in the best condition. A farmer came to warn me, that all the cows he had bought at the last fair, where I had bought mine, were ill. On the same day I separated one. On the next day I visited them: the four that had been bought together were taken away, and the others remained later.

The cow that I had withdrawn was put to feed with eighteen others of mine. It continued with them eight days in good condition, when it was perceived that it was out of spirits, and would not eat. It was immediately separated from the others, who continued one week in perfect health: at the expiration of that time two cows were attacked. Eight hours afterwards a new case presented itself. During one month two or three cows fell ill each week. This was attributable, without doubt, to chance. It was always on Monday or Tuesday that I remarked the first symptoms.

These two days having passed, I was almost certain of there being a week, or nearly so, without having new cases. The disease ceased in this herd, but it then attacked my third herd, composed of twenty-three cows. Three were attacked, then another from time to time ; but more than half of my fifty cows have not been ill at all.

Can this fact, which although rare is perfectly true, be attributed to the collection of individuals bought in different places, not having been brought up in the same localities and on which disease did not have the same influence ?

It will be very difficult to admit this, when we find that M. Louis Dammème, my neighbour, found himself precisely in the same position with myself, and that, among more than sixty cows which he possessed, two only have escaped the epizootic. With another of my neighbours, one only was attacked ; and there, with him, the disease was confined to that one.

In the case of the mayor of Saint Pierre Dumont, the epizootic shewed itself during the snowy weather, in a pasture ground situated on the border of the sea, and over more than two leagues of ground the animals became infected. In the course of ten days, two other herds of cows belonging to him, that were at grass, were put in the stable, and his calves of one year, those of two and three years, and his lean pigs. They were all attacked, his fat pigs only being spared. There were not any cases of disease among his nearest neighbours, with the exception of M. Viet's herd, every cow of which was affected. The epizootic then ceased, and did not re-appear in this canton until more than six months afterwards. More than sixty horned beasts were attacked in three days at the farm of M. Lecanu, at Maisy.

M. Carbonnel had five herds of cattle separated from each other, but the remaining four flocks presented several cases of the disease ; and, what is a remarkable thing, the same day and the same morning produced more or less disease in twelve herds in the neighbourhood.

If I wished to describe all the irregularities in the march of this epizootic, I should pass in review all the cow-houses in the neighbourhood, for in all of them, and everywhere, the disease has presented very different characters. This, at least, is what I have observed among more than six thousand horned beasts and six hundred pigs, which I have had in my possession. I have confined myself to the narration of facts, sufficient to enable us to appreciate the strange character of this disease.

Now let us see what are the symptoms of this malady.

Symptoms.—At the first appearance, the milch cow at grass experiences sudden depression and a staggering gait ; an abun-

dant salivation, often fetid, then ensues, with an extreme difficulty in taking food, the mastication of which is apparently impossible. There is oscillation or grinding of the jaws from one side to the other; the mouth is obstructed by a viscous matter, as well as by saliva; the animal, as much as she can, holds it open, in order to breathe or diminish the pain that she experiences, and she makes a noise which the farmers have designated under the name of *papper*.

The ears are depressed; the hair is dull and tarnished, and rough; the eyes are frequently weeping; the pulse little different from the normal state—in several, however, it is more or less accelerated. The rumination slow, difficult, and scarcely returned to the mouth: the fæcal matter, like the urine, is variable, and the secretion of the milk is sensibly diminished.

If the cow is at the same time attacked in the feet, which frequently happens, or if the disease begins in the feet, the animal stands as if she were nailed to the soil: the legs are brought as close together as possible; there is great difficulty in getting her to walk; she appears to suffer much, and catches up her legs as if she had pins or thorns in the feet: there is much trembling about the muscles of the shoulder, thighs, and buttocks, and the back is arched. On opening the mouth, a number of whitish points or elevations of the skin may be observed on the tongue, on the lips, and even at the end of the muzzle. Among certain subjects these symptoms are so slight that they pass unperceived, for the cows have not ceased to eat nor to walk: it is only perceived that they have difficulty in taking the food, in chewing it, and in the action of sucking up the fluids that are placed before them.

On the second and third day the disease increases in intensity; the rumination is suspended; the milk diminished; the paps become flabby; the walk is more painful, and the salivation more abundant. The swellings in the mouth have acquired, in some individuals, all their development; and they cover the whole of the buccal membrane, so that the interior of the mouth appears like one uninterrupted sore.

The tongue occasionally protrudes from the mouth, and exhales a fetid odour, while an abundant slimy, viscous, frothy matter dribbles down, loaded with a foetid discharge from the mouth and tongue. Occasionally, these shreds from the tongue, mixed with the saliva, are exceedingly troublesome. They accumulate in the throat—the animal breathes with difficulty—they threaten suffocation—a yellow mucus runs from the nostrils—the pulse is accelerated, and the hair is more tarnished and rough: all these evils increase with great rapidity, and occasionally, in

eight or ten days, the animals, if not dead, are reduced to the lowest condition. In general, the cows who are the most ill with the mouth are those that are the least so with the feet and paps.

In the greatest number of cases it is at the point of the tongue and on the tip that the phylactenæ were found. They are almost the usual colour of the epidermis—transparent—more or less elevated, and of irregular forms. There is almost always one that appeared first between the cartilaginous muzzle and the skin of the upper lip. The others are scattered in the mouth, on the gums, on the lips, on the nose, and vary in their forms, their size, and their number. It is usually on the third or fourth day that these vesicles burst. They diffuse a whitish serosity, after which this portion of the epidermis falls off, and shews the fleshy membrane red and of the colour of blood. If the point of the tongue is touched, there remains on the hand a thick skin covered with nervous papillæ, and resembling those which are peeled from a boiled tongue. This must cause considerable pain to the cow. These phylactenæ or bladders, as M. Mathieu calls them, resemble burns occasioned by boiling water being thrown into the mouth.

When the feet are sore at the same time as the mouth, it is also at the third or fourth day that this is found disseminated round and interposed between the hoofs, in quantity more or less considerable, with the vesicles as different in form as in size. They are prolonged sometimes under the whole of the sole, and detach it, even round the circumference of the hoof. A humour of a yellowish white runs from these phylactenæ of a sharpness like that among certain cows: the plantary pad is destroyed, and in the part which corresponds to it the bone is left naked.

It will be an error to imagine that all four feet of an animal are equally diseased: this is not the case. Among several subjects some will have only one foot attacked; in others two may be diseased, and usually these are the hind ones; but the soreness is always greatest in one particular foot.

In ordinary cases, and excepting those of which we have just spoken, it is seldom that, at the expiration of ten days, the cows do not again begin to feed. From that time the secretion of milk increases, and every appearance of the disease in the mouth and feet seems to disappear; but then a disease of the teats appears or increases, and these organs are covered with pustules, which, more or less, assume a confluent character.

In all the cow-houses of Bessin, when the mammary eruption had taken place, it was eight or fifteen days, or even three weeks, after the mouth and the feet were cured. The disease was very

seldom seen to attack the paps and these other parts at the same time. In many cattle the teats were not at all diseased, or very slightly so.

The vesicles of the teats are whitish, transparent, and crystalline at their centre. According to the length of time that they have existed they take on a yellowish hue, and finally become almost red on the borders.

A fact which almost always takes place will enable us to discover the true character of the disease of the teats. A great number of cows of different troops have transmitted these pustules to the persons who usually milk them, and who have cuts or excoriations either on the hands or the arms; but these have been persons that have not been vaccinated. Among them the pimples or vesicles have developed themselves even to the point of confluence, and so numerous that these persons not only were unable to milk the cows, but were compelled to quit all other work. Among individuals thus vaccinated these sores are replaced by small pimples and a slight itching.

These vesicles pass through the same course as those produced by the vaccine virus, from which it seems very little to differ. I think that they may consider it as being of the same character as cow-pox.

When the pimples are rubbed, the act of milking causes them to bleed; and the cow experiences a great deal of pain, and will not suffer herself to be milked.

This state may be complicated in a very serious manner: it may happen that one or more of the teats may sadly increase in size, and that the mammary glands may become highly inflamed, especially if there are any pimples at the extremity of the teat which obstruct the passage of the milk: then the inflammation becomes very acute. It may terminate in several ways, which are not all equally favourable.

1st. By resolution, which is very rare. It is necessary for this that the canal should not be entirely stopped, in order that by degrees it may allow the milk to escape.

2d. By atrophy, or gradual wasting away: the milky functions are then destroyed.

3d. By suppuration. In this case the milk remains in the gland, and is dissolved there, and purulent reservoirs are formed which are visible externally. Portions of the pap fall off, and the reservoir is closed; but, very soon, it forms again, and pursues the same course again until the almost utter destruction of one or more of the teats, and even of the whole of the udder. These purulent reservoirs may thus follow each other for many months, or they may continue during life.

4th. By gangrene : then the gland, or the entire udder, falls off, and an infectious smell spreads around.

Induration also sometimes follows the suppuration, or the inflammatory swelling assumes a chronic state : then the gland remains hard and painful. It often participates in the engorgement of the part, and this may again determine the loss of a portion or of the whole of the gland. Often also the teat becomes gangrenous in some part of it, or even in the whole : in this state, if the cow is milked, the fluid is withdrawn with trouble, and a reddish matter, bloody and extremely fœtid, escapes. This complication is much to be dreaded : it not only suppresses the secretion of the milk in whole or in part, but it destroys the appetite of the cow, who grows thin, falls into a consumptive state, and can be fattened no more.

Swellings of the udder occasionally appear suddenly, and without any known cause. They attack more particularly cows who are put up to fatten : they fix themselves on a gland without producing much induration, or after that is passed. These cows suffer very much, and rapidly lose flesh.

These inflammations of the udder have appeared at the moment when, the appetite of the cows being returned, the discharge of milk had resumed again its primitive state. The farmers then believe their cows are cured, and they say that the disease was so little troublesome that there is nothing more to be done. Indeed, in several cases the epizootic had been so mild, that the farmers have abandoned their cows to themselves, and left them to graze at their pleasure. But all have not been so favoured ; and, besides the complication that we have just pointed out, we will speak of another which was particularly prevalent in the summer of 1841.

The disease of the feet, which they believed to have been cured among the greater part of the cattle, or which was in a way to be cured, has appeared again in several herds, also upon several single cows, but in very different degrees, from simple lameness even to the impossibility of rising. If the animals were forced to get up, they fell down again immediately, manifesting a dreadful degree of pain, which determined such an acceleration of breathing that the animal was almost suffocated. These last symptoms progress slowly, and do not shew themselves until a greater or less time after the attack of the disease on the feet. At this period, if the feet are examined, no more pustules will be found, and often even all trace of them has disappeared ; but there is heat, pain, and swelling, which sometimes extend even to the summit of the fetlock. The hoofs widen, and exhibit the integument which unites them. In the major part of these cases the

skin is of a red violet colour. It may be regularly torn towards the middle, and discovers a fungus formed by the transversal ligament, the simple fall of which has been described by several authors under the name of Limace. This fungus escapes through the opening of the integument in proportion as it is detached, and finishes by falling on the eighth or twelfth day, and leaving a large and long wound, hollow, with a red colour appearing on the black, and from which runs an ichorous fluid of the same colour, of a strong and disagreeable smell, which serves as a vehicle to the portions of tissue that detach themselves from the wound. The evil may become deeper if, before this, it attacks the capsular ligament, as well as the synovial membrane of the articulation of the first phalangen with the second, or of the latter with the third, and that in the internal part. The synovia escapes by means of the wound, the lining membrane is destroyed, fistulæ form themselves on the exterior, the bones increase in size, and, when we are inclined to believe that the wound is cicatrizing, a new fistula forms itself, and appears in the centre of a kind of *cul de poule**. The lameness, for a little while suppressed, appears again with greater violence; the cow no longer dares to put her foot to the ground; the hoof grows thin, and the foot is deformed more and more. When cicatrization takes place, the animal still remains lame.

This complication of the disease, which has hardly ever taken place except in a single hoof and a single foot, was apparent on three cows and a calf belonging to M. Joachim. I only know one cow who has experienced this complication in the two hind feet and their two hoofs. It had been a long time without being able to rise; and even now, although six months have elapsed since the commencement of the disease, it walks with extreme difficulty. This cow belonged to M. Augé, of the Cambes, which had another attack of this affection on the two hoofs of the hind feet.

[To be continued.]

* The *cul de poule* of the veterinarian is an ulcer, the borders of which project and turn over.

ON THE REMOVAL OF CALCULI FROM THE BLADDER.

By Mr. MOGFORD, V.S., Guernsey.

MY attention has been arrested by an article in your number for January on Lithotomy; a few observations on which, as they are the result of my own experience, will not, I am sure, give offence to that justly respected operator, Mr. Field. I cannot forbear from again expressing my surprise that, in operations of this kind, veterinary surgeons do not make use of the means so peculiarly accessible to them, viz. inverting the bladder through the rectum. Mr. Percivall has very kindly noticed my mode of operation in the third volume of his Lectures and the second of his Pathology.

I first extracted a stone from the bladder in this way in the year 1820, and the case was published by Mr. White in 1824. No operation could be more simple or less exposed to dangerous consequences. There was no inflammatory symptom whatever, and the horse was soon after hunted. In fact, all that is required is a scapula and a probe-pointed bistoury, for the arteries are easily avoided without any guide.

In proof of my assertion I may state that I have more than once introduced a stone into the bladder, and extracted it in the same way.

About two years ago I introduced, by way of experiment, an egg into the bladder of a mare, and extracted it again, whilst she was in a standing position. As this was done in a private manner, I thought it advisable to have witnesses. I, therefore, introduced the egg into the bladder again, and left it there until the following morning, when I found that the bladder was full to bursting, as the mare was afraid to stale. At my request, three medical gentlemen of this island kindly accompanied me the next morning to witness the operation; but being puzzled by the fulness of the bladder, and having no catheter at hand, I introduced, as a substitute, the nose of a bellows, which answered the purpose pretty well, although the large quantity of water in the bladder retarded the operation. Notwithstanding this, however, the operation was performed within a minute, and without breaking the egg, although the shell had been considerably softened by the action of the acid of the urine. In order to put the whole matter beyond a doubt to the spectators, I again introduced the egg. The mare was then killed, the bladder taken out, and shewn to them with the egg in it.

There is some degree of tact required in the operation, the want of which has probably, on many occasions, prevented its adoption. When the arm is first introduced into the rectum, the animal forces against it, in order to expel it; the arm must remain quiet, until these struggles have ceased, when the operator may proceed without difficulty. If the finger should not be sufficiently long to reach the neck of the bladder from the opening, the latter may be pushed towards the finger from the rectum.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

A Concise Treatise on the Use and Abuse of the Flexible Tube, or Probang, for the Relief of Choking, and other Mechanical Disorders of Cattle. By MR. ROBERT READ, V.S., Crediton.

MANY cattle are lost by the retention of certain substances in the gullet, and by the extrication of gaseous fluids in the stomach. Great improvements have lately taken place in this division of bovine surgery. The farmer and the veterinary surgeon owe much to Mr. Read, of the Regent Circus, in London, for the invention of certain flexible tubes, by means of which gas may be extricated or medicine introduced.

His namesake, Mr. Read, of Crediton, has likewise turned his attention to the maladies of the gullet and the stomach, and in the present work has taught us to remedy many of the diseases of the alimentary canal. Recourse to the probang, as soon as obstruction in the gullet is manifest, is strongly urged by our author; but at the same time he objects to any thing hasty or violent, for that has been the destruction of many a beast. "If," says Mr. Read, "after the probang has reached the obstructing body in the throat it does not yield to fair force, desist—wait awhile—be not impatient: the being in a hurry has been the death of scores of beasts." That we firmly believe. "The longer the obstruction remains in the throat the softer it gets, and probably on again pushing down the tube—half an hour or an hour intervening—it readily passes on into the rumen or stomach. If the obstruction is not soon overcome, let not the veterinarian give up the point. There are no animals that bear pressure on the

windpipe or trachea, from bodies impacted in the throat, so long as do the bovine race. Cases have occurred of its having remained one or two days, or even longer, and yet the patient has done well."

It will, however, be occasionally necessary to puncture *the stomach* by the introduction of the trocar, in order to avert rupture, and to allow the obstructing body to pass more readily into the paunch. "If," says our author, "an animal is sadly blown, from the throat being mechanically blocked up by substances too large for deglutition, and that after repeated trials to force it on, do not hesitate at once to puncture the rumen. It is an operation easy to be performed, and that will be rarely attended by any untoward result. In these cases, promptitude with decision will be attended with success, while indecision will be punished by unprofitable terminations. In all operations be not too dilatory, nor yet too impatient. Have self-confidence without being too rash or hasty, and frequently that which you considered an insurmountable obstacle one minute, will, before the expiration of the ensuing one, be accomplished with ease."

The internal coat of the *œsophagus* is very properly described by the author as frequently lacerated by persons unacquainted with the structure and course of the gullet, and endeavouring to push on, by undue force, the substance that is lodged in the tube. The operator may be sure that he is wrong when, on the withdrawal of the instrument, its end is covered with blood and mucus; and yet, if the laceration is not too great, the beast may recover. Generally speaking, however, when there is much evident laceration, it will be an act of humanity to the animal and of interest to the owner to order the patient to be slaughtered.

Rupture of the *œsophagus* occasionally is found. Too much violence has been used in such a case, or there has been too much ignorance of the relative situation of the parts. Mr. Read enters into this point at considerable length.

It will appear, from what has been stated, that there is a great deal of good matter in this work, and that few of us would rise from the perusal of it without considerable benefit. If that would be the case, we have no great right to complain if there is some occasional bad writing in the work—some forgetfulness of grammatical construction—or the introduction of terms that are to be found in no other book. Seated in our critic's chair, we are compelled not entirely to overlook these deviations from common usage, but our good feeling towards the author is unimpaired.

We admire the spirit of kindness towards his patients that pervades his work. He speaks of blood-striking or apoplexy in oxen, proceeding from a plethoric condition of the animal—over-

exertion in hot weather—the encircling bow of the yoke being often too tight around the neck and preventing the return of blood from the head—the pressure of the yoke on the windpipe preventing the free ingress of air into the lungs—its pressure on the throat producing hoove or blown—the cumbrous yoke with its unyielding bow getting more and more into disuse, and the collar harness, now so generally introduced, and admirable for its ease and comfort to the oxen ;—these are all links in a good cause—that of humanity. There is no absurd nonsense here, but the duty of man towards the inferior animals is well and worthily pointed out.

Y.

MISCELLANEA.

THE POISON OF LEAD IN KENNELS.

The Queen's Stag-Hounds.—It was stated in *The Times*, a week or ten days ago, that (in consequence of a discovery which had been recently made by a medical gentleman at Windsor, in the case of one of the whippers-in to the Royal hunt, who was labouring under the effects of paralysis) the cause of kennel-lameness has been found to proceed from the presence of lead in the water that is supplied to the kennel at Ascot by means of pipes composed of that metal, through which the water is conveyed for a considerable distance. Since the discovery of the presumed cause of lameness in the Royal pack, the water has been analysed by Dr. Ryan, professor of chemistry at the Polytechnic Chemical School, and also by Mr. Philips, the celebrated chemist, by order of the Commissioners of Woods and Forests. The results of Dr. Ryan's two experiments are as follow :—The first examination was made from a sample of water taken from the source or spring-head before it had entered the leaden pipes, when the specific gravity of 60 degrees was found to be 1.000.18. The imperial pint, on evaporation to dryness, yielded 2.37 grains of solid matter.

The solid contents of an imperial pint were found by Dr. Ryan to be

	Grains.
Chloride of sodium.....	.154
Chloride of magnesium.....	.071
Sulphate of Lime.....	0.123
A trace of carbonic acid	

 2.348

Excess in the course of analysis..... 008

The second examination was made of water taken from the leaden pipes at the Royal kennel at Ascot, when the specific gravity was found to be 100.42. Upon an imperial pint of this water being, as in the former experiment, evaporated to dryness, it yielded two grains of solid matter; viz.

	Grains.
Carbonate of lead .....	.164
Organic matter, and traces of chlorides of sodium and magnesium, and sulphate of lime .....	.038
	<u>.202</u>
Excess in the course of analysis....	.002

It has therefore been calculated by Dr. Ryan, that every imperial gallon of the water used at the Royal kennel, after passing through the leaden pipes, contains 1.312 grains of the carbonate of lead.

THE VETERINARIAN, MAY 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

WE have only room for half a dozen lines. There were few of our readers who did not participate in our pleasure on the rejection of the dog-cart bill. It would have been an unjust and cruel measure with regard to our quadruped friends and dependents, and would have doomed thousands of them to destruction. The poor ass and the goat would have probably suffered to an extent scarcely now dreamed of. The passing of the bill would also have been unjust to a large class of persons to whom the dog now helps to afford the means of subsistence, and it would have stamped upon our country a character of folly and inhumanity that would never have been effaced.

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LECTURES ON HORSES.

By WILLIAM PERCIVALL, *M.R.C.S., Veterinary Surgeon,*
First Life Guards.

TAKING a side view of the quarter, three prominent points attract attention; the *round-bone* above, the *point of the quarter* behind, and the *stifle* in front; which three prominences may be said to constitute the lateral boundaries of the quarter, and, by their relative distances from one another, and their degrees of prominence or projection, principally to determine its lateral form and dimensions. It will be remembered that the point of the quarter owes its existence simply to a process of bone; whereas both the round-bone and stifle are constituted of joints, are not fixed but moveable parts; nor so much parts *from* which muscles act as *on* which their action operates. The round-bone joint we have already considered; we will now pass downward to the

STIFLE.

This joint is one of peculiar and beautiful construction—one from which it would appear the idea of that mechanical power and useful invention, the pulley, took its origin. The joint is formed by the adaptation of the lower or condyloid end of the *femoral bone* to the upper end of the *tibia*, with the super-addition, in front, of the *patella*. The condyloid projections of which the lower end of the femoral bone is constituted revolve within ovoid, shallow, cup-like cavities excavated in the top of the tibia; but so superficial are these cavities, or rather depressions—so incommensurate with the condyles revolving in or rather upon them, that, in the angular position in which the femoral and tibial bones relatively stand,

were it not for the super-imposition of the patella, the front of the joint would be left dangerously insecure and entirely unprotected.

THE PATELLA, or stifle-bone, of the horse, corresponds to the patella or knee-pan of a man: their anatomical situation and relations are the same, and they answer similar purposes in both animal machines. However irreconcilable with any notions of relative situation it may at first appear to an unprofessional mind, the stifle of the horse is regarded by the human anatomist as his *knee*, for the same reason that the veterinarian would look upon the knee of a man as his *stifle*. One grand difference, however, between these structures is, that, in man the femoral bone stands perpendicularly upon the tibia, whereas, in the quadruped the bones are placed at a right angle, almost, in regard to each other: a circumstance from which we may infer that the patella was not added for the purpose of making the joint complete so much as for the grand object of serving as a pulley and a lever to the muscles engaged in the important business of extending the thigh under the body and aiding in progression. The biped—man—is enabled to maintain his erect posture with comparative ease, or at little expense of muscular action, by means, principally, of large and powerful muscles inserted into his knee-pan: were the knees not kept straightened the stability and strength of the standing posture would be lost: when from weakness, or any other cause, the extensor muscles lose part of their power, so that the legs cannot be completely straightened, we know how insecure the standing is, to say nothing of the awkwardness and infirmness it occasions in progression. Even after a man has had fracture of one of his knee-pans, and the fractured divisions of bone have united—as they commonly do through the intervention of ligamentous substance—the increased length of the pulley and consequent diminished effect resulting from the contractions of the extensor muscles, occasions halting in the walk, and detracts from the stability of the standing posture. To the quadruped these observations are not altogether strictly applicable. Standing, as he does, upon four legs, and these being so placed that the body is mechanically supported by them, after the manner of a stool or form upon its four supporters, but very little muscular action is necessary to keep him standing; and although the muscles affixed to the patella contribute to this function, yet is that office comparatively trifling to the one they perform in the work of progression. When the hind limbs, through the agency of the flexor muscles, have been raised or flexed to their utmost, then do the extensor muscles come into play, projecting the limbs underneath the body, and pointing the toes forward, in order that they may

become fixed points upon the ground, and serve as *fulcra* in the working of the machine onward.

We may, therefore, fairly ascribe three functions or uses to the patella. Firstly, it serves to complete the stifle-joint in front, and to protect it against injury coming in that direction. Secondly, it forms a pulley, playing over the condyloid surface of the femoral bone, and thus greatly facilitating the action of the extensor muscles. Thirdly, it may be regarded in the light of a process, though a moveable one, giving the muscles inserted into it the advantage of considerable leverage in their operation upon the thigh: consequently, the more prominent the stifle-bone is, the greater the power given to the muscles. Were there no stifle-bone existing, the *tendons* of the extensor muscles of the thigh would have to play over the bare condyloid cavity of the femur, under the disadvantage of increase of friction and loss of leverage; and had the bone been fixed instead of moveable, the projection from the head of the tibia must have been of a lengthy and awkward shape, and, withal, would not have conferred the same power and facility of action to the muscles which they possess at present. Perhaps nothing more strikingly demonstrates the utility of the patella than the accident of its *dislocation*: the bone has no sooner slipped out of its place than all power of extension of the thigh is lost; and the result is, dragging of the toe of the hind leg upon the ground, the animal having no power to advance the limb underneath the body. The bone, in being dislocated, has got into a situation in which it is rendered a fixture, and the muscles consequently become powerless. The instant, however, the bone is righted, all power and action are restored, the same as if nothing had happened.

The operation of the muscles implanted into the patella, and through it acting on the tibia, or true thigh-bone, is, then, extension of the thigh, and thereby bringing the leg forward underneath the body, preparatory to the effort of progression; the act of progression itself being, as we shall hereafter discover, mainly effected by the muscles inserted into the hock, assisted, however, by those of the patella. Action in the hind extremity is commenced by a general flexion of the limb—flexion of the femoral bone on the pelvis, elevating the stifle against the body; flexion of the tibia and hock, raising the foot off the ground, and preparing the limb for projection underneath the body: then comes the act of straightening to throw the limb forward, and the continuance of the same act it is, enforced by additional powers, which propels the machine in progression. A well-formed stifle is, therefore, a point of some importance, and the best-formed joint of this description is that which, from the sharpness of the angle between the femoral and

tibial bones, is forced well forward and upward towards the body, and at the same time discloses through the skin the prominence of the patella, but particularly that of the rectus muscle above it. The prominence of the stifle, it is evident, must depend upon the obliquity of the position of the femoral bone, and the sharpness of the angle formed between it and the tibia: in one instance, the stifle will appear bold and obtrusive, abutting almost against the belly; in another, it will be seen situated low down upon the thigh, quite away from the belly; and this latter is the stifle of all others which indicates, as far as it and its connexions are concerned, want of power and action in the hind quarter.

THE THIGH, OR GASKIN.

What horse-persons now understand by the *thigh* of the horse is the part between the stifle and hock joints; a part, anatomically regarded, that corresponds to the human *leg*. In the young animal it is composed of two bones; but these bones are united by an elastic (cartilago-ligamentous) substance which, as the animal approaches the adult period, becomes gradually converted into osseous matter, until at length the two bones become in reality one and the same solid structure; so that in every horse of full growth it would be but in accordance with truth to say, the thigh was composed of a single bone. The tibia presents upon its superior end two ovoid superficial depressions, which are, by the addition of cartilaginous interventions, rendered deeper and better adapted to receive the condyles of the femoral bone, the one moving upon the other in extension and flexion, and having some little lateral motion. The lower end of the tibia is smaller than the superior, the bone tapering rather from top to bottom, and is shaped so as to accommodate itself to the construction of the hock-joint.

The chief considerations touching the thigh or gaskin are its *position*, its *length*, and its *thickness* or muscularity. In accordance with the harmony of natural formations, where the haunches are straight and lengthy the thighs become lengthy and receding: in horsemen's phraseology, they are well "let down;" and the consequence is, the hocks are *low*, and the cannons *short*. The hind quarter, in fact, altogether, has the turn and appearance of the greyhound, and is evidently well adapted for purposes of speed. And, providing all this be accompanied by the requisite substance or muscularity of parts, a quarter of such a character in a race-horse must be regarded as one of his very finest and most admirable points. This constitutes the veritable *blood quarter*—the quarter every man who is seeking after breeding and speed is ever looking for. And when we find it with "the thighs let down into

the hocks," or, in other words, with muscle and sinew from upper end to lower, nothing can surpass it for speed in the gallop and bottom in continuing it.

I have observed that length and obliquity of thigh are, commonly, correspondent formations; but they are not necessarily so: we now and then meet with thorough-bred horses with straight and lengthy quarters, and extreme length of thigh, and yet the thigh is so *straight* that its line of descent approaches even the perpendicular. I remember a racer—"Wouvermans"—who was most remarkably straight and lengthy in his gaskins, and yet he performed with considerable *éclat*. In these cases, length of thigh affords great stride, and muscularity tells in maintaining it; but in the absence of obliquity it is impossible there can be that spring or elasticity in the movements which is likewise a great promoter of speed, and which must ever tend to render the production of speed less expensive to the animal machine. Some greyhounds are very straight-thighed; but hares and rabbits, and many other animals of great speed, possess extreme obliquity, as well as length, in the conformation of their hind limbs. Perhaps the oblique hind quarters are the most suitable for efforts of bounding or leaping; and that, as such, they are of more value in hunters than in racers.

THE HOCK.

The hock—the old and proper spelling of which is *hough*—of the quadruped is the same as the heel of man; the *os calcis* being the bone, in both instances, by which the projecting parts, commonly distinguished by these appellations, is formed: the hock-joint, altogether, being correspondent to our ankle-joint. The joint, either as hock or ankle, is composed of six bones, being a sort of correlative structure to the knee; but why, like the knee, so many pieces enter into its composition, is not very apparent, and especially in the instance of the hock, wherein, as far as the motion of the joint is concerned, but one appears absolutely requisite. In a situation where so many pieces are placed to receive the jar or shock, and where these pieces are reposing upon elastic cushions, concussion must, no doubt, be very much counter-acted; to my mind, however, this does not altogether account for the curious mechanism displayed in the instance before us, as well as in some other parts of the skeleton. The lower end of the tibia has two deep furrows or grooves running obliquely across it, and these are fitted with admirable precision to a pulley-like surface, presented upwards by the main bone of the hock, the *astragalus*, upon which the tibia rests; and between these two bones, the tibia and astragalus, is carried on almost all the motion of which the hock is capa-

ble, they being excellently adapted for the work by the pulley-like articulation just mentioned. Where is the utility, then, of the other five bones? Whatever uses we may be able to attach to the remaining four, the purposes served by one of the five, the *os calcis*, become too obvious to admit of any question. *The point of the hock*, that lever of more power than any one in the machine besides, through the aid of which the muscles most of all others concerned in progression are enabled to perform their great work, consists of the *os calcis*; this of itself being the part, as I observed before, which commonly goes by the name of the hock. When horsepersons talk about horses having "good" or "bad" hocks, they allude, for the most part, to the position and length of this lever. I heard a man, a good judge, say on a race-course on one occasion, "Shew me the horses' *hocks*, and I will point out the winner." In a word, if there be one "point" about horses of more importance than another—one that cannot be tolerated badly formed or imperfectly developed—that point is *the hock*. What, then, is it that constitutes "a good hock?" Firstly, and principally, it ought to be *large* in proportion to other parts: a disproportionably *small* hock can never prove equivalent in power to a large one of the same quality. On a lateral view, it should appear *broad*; and, on a view from behind, bulky and bony. And, then, the *point* or lever should stand boldly and prominently out from behind it, to a degree to give the tendinous cords affixed to it that set-off from the limb which enables one to trace them through the skin perfectly distinct—isolated as it were—from the substance of the thigh. "Bad hocks," such as want these "fair proportions," are deficient in breadth and boldness of feature, and have, in consequence of such deficiencies, a mean, gummy, unattractive aspect. When the hock, from want of boldness and projection in its point, is rounded behind, forming, in conjunction with the thigh and leg in their posterior outline, a sort of semicircle, the horse is said to be *sickle-hocked*. And when, from the breadth of the pelvis, or the inward direction given to the tibial bones, the hocks are positioned too near to each other, the hind cannons running forward and the hind toes turning outward, the horse is denominated *cow-hocked*; cows being remarkable for such conformation. The cannon, from the hock, should descend in a vertical line towards the ground; a position in which it has more extent of motion, both forward and backward, and one which gives to the hock its greatest power and efficiency in action. The longer the thigh and the more the hock "sets out" behind from the body, the greater the sphere of the action of the hind limb, though the power of the hock is weakened by the longitude of the tendons inserted into it. That is the strongest hock which, being of itself well-formed, receives the

muscular substance, along with the tendinous cords, into its very substance, the two being knit closely and compactly together; or, to use the dealer's phrase, "the thighs being let down into the hocks." A horse with straight thighs will have *straight hocks*; and these, though their straightness cannot be regarded, abstractedly, but in a disadvantageous light, while they are the best or only kind which could have suited such a make of limb, may still be good of their kind, and therefore are not to be condemned. The os calcis may be lengthy and prominent upward, and the lateral projections may stand well and clearly out from the sides, and the hock, though straight, may, as I said before, still be considered good.

Hocks, I must repeat once more before I conclude, are of that importance in action that they deserve, in our examinations, to command much attention from us. A horse may have very good hocks, and yet be so shapen in other respects as to be worth very little; but hardly any thing can compensate for bad hocks, the hock being in its operation that in progression which the oar is to the boat. Without power therein no horse can go well and long: he may possess action, but he cannot fail to prove deficient in strength and endurance.

ON DIVISION OF THE FLEXOR TENDONS IN A HORSE.

By Mr. THOS. MATHER, V.S., Edinburgh.

IN perusing some of the contributions to your valuable Journal of last year, I observed a few successful cases of this operation recorded by some practitioners, and particularly by Mr. Carlisle, V.S., Wigton, who had operated with the same success, and which he attributes solely to a new system in veterinary surgery.

Having, lately, had an opportunity of performing that operation, I determined on putting Mr. Carlisle's plan to the test of experiment, and am happy to say with complete success.

The patient was a valuable carriage horse, the property of a gentleman in this town, eight years old, and with contracted flexor tendons in the near fore leg, for which he had been fired and repeatedly blistered about a year ago. Notwithstanding all this, he became gradually worse; the foot contracted, and the metacarpal bone overlapped the os suffraginis to a great extent; so much so, that, ere long, he would have been walking on the front of the fetlock joint.

As the owner did not wish to lose the animal, I was desired to

examine him, and to determine whether any thing could be done : He had been told that nothing could be of any avail, except dividing the tendons, to which he immediately consented, as by this time the horse was completely useless.

The animal was then put under my care about the latter end of February 1843. Being in good condition at the time, a little treatment only was necessary previous for the operation. A proper dieting and purging were also had recourse to. I then pared out the foot, and put on a bar shoe, projecting at the posterior part of the foot about two inches, with a calkin welded on each heel, in order to support his leg, and prevent the obliquity of the pastern from being too great.

About four days after adopting this treatment, I proceeded to cast the horse ; and then unloosed the diseased limb from the hobbles, and secured it with a webbing to a fixture. This is necessary, in order to extend it forwards and expose the leg for the operation.

I then made a longitudinal incision about two inches in length from above downwards, through the integuments on the inside of the leg, midway between the carpus and pastern joint, and rather posterior to the bloodvessels and nerves. Afterwards, with my index finger I freed the skin from its connexion with the tendons, and introduced the handle of my scalpel between the tendons and the suspensory ligament, in order to separate the adhesions between them : this being effected, by the aid of an assistant I got the skin separated by means of two steel hooks, and held there until I flexed the toe of the foot upon the leg, when the tendons appeared prominent above the skin : after this, my finger was placed underneath the tendons, to serve as a guide for my knife.

I then introduced a *curved* probe-pointed bistoury, directing the edge of it backwards, and divided the tendons by an oblique incision of about two inches in length, avoiding the bloodvessels and nerves. Finally, I placed the leg on my knee, as if going to bend a stick, and with a little force broke down the adhesions, and put the leg in its proper position. I then introduced my finger, and found that the tendons were separate two inches. The integuments were brought together by two sutures and the operation completed. The patient was then led into the stable, and a bandage with a little tow was applied on the wound.

After being unloosed from the hobbles, he was seized with a shivering fit ; I therefore ordered him to be well clothed, a warm mash given him, and some chilled water. The shivering ceased in about two hours, and he was comfortable and warm, in which state he was locked up for the night.

On the following day the wound was dressed with some cooling lotion, and the bandage replaced, after which he was put in the slings. The wound healed up, without any bad symptom arising, in the space of four weeks from the operation.

In the fifth week he had gentle exercise, and walked perfectly sound; nevertheless, I applied a blister to the leg, and he is now completely free in all his paces, and trots as well as any horse in the owner's service. My patient is going out for a month's run at grass, in order to improve his condition, for he had been very considerably reduced in flesh.

This, then, is the successful issue of the case by the new system of operating; and it is for this reason that I send the account of it for insertion in your valuable Journal.

I do not mean to deprecate the old system entirely,—that of making a transverse section of the tendons,—until I have ample proof of the efficacy of the oblique method of operating. Perhaps some of the members of the profession will do us the favour to give it a trial, and set the matter at rest, for it is an important subject.

P.S.—While finishing this paper, I happened to glance on Mr. Blaine's treatment on the division of the flexor tendons, and I find that he recommends putting a patten shoe on the opposite foot, in order to keep the divided tendons apart from each other, and prevent their contracting again. In my opinion this is unnecessary, as we require rather to support the tendons, and prevent the fetlock joint from receding too far backwards.

A CASE OF FRACTURE OF THE COFFIN BONE IN A HORSE.

By the same.

PERHAPS the history of the following case may be worthy of a corner in your Periodical: it is rather an intricate one, and of rare occurrence. The patient was the property of Mr. Orr, who had bought him about the month of April, 1842. He was a strong useful animal, but had been previously foundered. Notwithstanding this, he was in excellent condition at the time of sale, and his feet (although pumiced) were in order. In the month of July last he became suddenly lame. In this state he was kept working for a day or two after, while he got worse, and was sent to me to be examined. I took off the shoe,

and examined the foot, but nothing could be detected as to the cause of lameness farther than that the sole was hard and tender from want of stopping. I had him shod with leather, and stopped up the foot. In walking him out again after this, he evidently went a little better. On a more minute examination I found that he evinced great pain on pressure round the coronet, with swelling, and a considerable degree of heat.

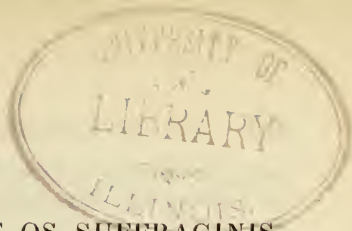
As my diagnosis was very imperfect from these symptoms, and I could hear no crepitus, I ordered the foot to be enveloped in a warm poultice, and fomentation to be applied three times a-day. This treatment was continued for ten days, when, although a little better, he still was unsound.

On re-examination I found, when removing the shoe, that the horny sole was discoloured from extravasated blood. As the owner had absolute need of him for work, he continued his work for a day. In the evening he became so lame, that it was with difficulty he could be got home, and continued in this state for upwards of a fortnight.

As I was now quite sure that fracture of either the coffin or navicular bone had taken place, from the circumstance of his falling suddenly lame, and the heat, pain, and swelling round the coronet, along with this discolouration of the horny sole, it was determined to have him fired and repeatedly blistered, which was done accordingly.

As he did not seem to make much progress, although thus treated for three months, the owner had him destroyed.

On a post-mortem examination of the foot, I found a longitudinal fracture through one-half of the *os pedis*. Now the question is, What could have been the cause of this? My conclusion is, that, at the first appearance of the lameness, it was merely a partial fracture, and that, when he was put to work, in ten days afterwards, it produced a complete separation of the bone—more especially, in such cases, will this take place. As the bones of the foot in founder become more or less diseased, and their physical strength materially reduced, the bone is more fragile and the elastic principle is destroyed. Instead of ligament or cartilage, bone is deposited; and the result is, that they are not able any longer to bear the same weight and concussion as in health, without danger of fracture.



A CASE OF FRACTURE OF THE OS SUFFRAGINIS.

By Mr. B. B. FERRABY, V.S., Bourn, Lincolnshire.

SHOULD you deem this account of a comminuted fracture of the os suffraginis worthy a nook in your valuable Periodical, you will favour me by giving it a place. On Tuesday, the 2d of this month, I was summoned to Burghley, the seat of the Marquis of Exeter, to examine a horse called Sir Robert, and which had that morning received an accident whilst leading a gallop for some younger racers. On entering his box I found his pulse hurried, his off fore foot flexed, and he being in a profuse state of perspiration. I proceeded to examine the limb, and at once detected a crepitus. On further examination, I found it to be a comminuted fracture of the os suffraginis, and a partial dislocation of its lower head from the os coronæ. Taking into consideration the serious extent of injury, and the horse being now a gelding, I advised his lordship to have him shot. He immediately complied, and, on examining the parts after death, I was well satisfied with my decision.

I have, in my practice, seen many cases of this nature in some bones, such as the metacarpal, femur, &c.; but this, in my opinion, is a case of the greatest singularity, taking into consideration the shortness of the bone, and the lad who rode the horse weighing but eight stones, and the turf on which he was galloping being perfectly flat.

ON SORE SHINS IN HORSES.

By Mr. J. R. ATCHERLEY, Bridgnorth.

MANY years of practical knowledge in the treatment and training of horses have induced me to inquire into the nature and consequences of what is vulgarly denominated sore shins, and to arrest the attention of owners and trainers of race-horses to the importance of the disease. I regret to say that it has hitherto been neglected, or, at least, has been regarded as an affection of too trifling a nature to warrant a serious and distinct consideration; but, as it is a disease of insidious origin, and one which too often disappoints the expectations of confiding owners, and implicates the future character both of the horse and the trainer,

it must certainly deserve to be placed in as prominent a position as any of the more active diseases incidental to the animal economy.

It is an indubitable fact, well known to those who really understand training, that a horse with sore shins cannot win a race, and that from physical inability, however good he may otherwise be, as regards condition or stamina; and I do not hesitate to assert, that it is yearly the primary cause of consigning some of the best blood this country produces to premature oblivion.

Touching the cause of sore shins, I may say negatively, that they are not produced by upright shoulders, want of bone, twisted fore legs, lengths of gallops, heavy state of the ground, or pace, but I believe by carrying too much weight in their exercise.

Should a horse, as he gets near the time of racing, be found a little thick in the neck, and require to take a four-mile sweat, with perhaps four hoods on, and body-clothes in proportion, while, added to this, is only a lad of seven stones weight, you stand a considerable chance of having sore shins, in the leg he leads with at least.

Mr. Percivall, in his "Lectures on Horses," most appropriately denominates the large metacarpal bone as the shaft of support to the leg. There is too much weight thrown upon these pillars before the material of which they are composed has become set, and this is the frequent cause of sore shins. As a proof of this, we seldom hear of it after the horse is three years old.

Speaking technically, the deposit of ossific matter in young animals being greater in proportion than the absorption, and this deposit being furnished principally from the vessels of the periosteum, that important membrane is highly vascular and irritable. Hence the inability of the immature bones and their coverings to sustain, without injury, the unnatural weight thrown upon them and the suspensory ligaments—independent of that of the entire animal machine—which they receive with fearful impetuosity at each successive bound, when going what is called a telling pace, from the flexion and extension of the powerful muscles of the loins and hind quarters.

It will be seen from what I have attempted to describe, that the more oblique the shoulders are the more perfect the conformation of the fore limbs will be, added to length and power behind, and the greater the force and velocity with which such an animal will be enabled to strike the ground; therefore the best horses are most likely to suffer.

The analogy between sore shins and splints is very great, so

much so as to be almost identical. We mark this difference, viz., that splents do not always produce lameness, that is to say, when the exostosis is slowly thrown out, and, consequently, the periosteum gradually pressed upon, and it not interfering with the flexor tendons, suspensory ligaments or motion of the joint: but, in the case of sore shins, the inflammatory action is more suddenly produced, more active and extensive, and always situated beneath the extensor tendon. From this circumstance, perfect extension of the limb is rendered almost impossible, and the slightest attempt in progression extremely painful. We know from observation and analogy, that when tendons, the periosteum, or other resisting membranes, become the seat of inflammation, there is—other circumstances being the same—a greater increase of sensibility than in parts of more yielding texture.

CHRONIC FARCY OBSERVED IN THIRTY-EIGHT MARES THAT HAD BEEN LEAPED BY A GLANDERED HORSE.

By M. DAYOT, V.S., Department de Finistère.

A DRAUGHT stallion, six years old, beautifully formed, and in good condition, the integument free and yielding, full of gaiety and in high condition, presented the following symptoms: The right nostril was moist, and there ran from it a grey-coloured viscous discharge. There was also a discharge from the right eye, and the lachrymal vein was enlarged. The lower part of the frontal bone was slightly turgid. The ganglia on the right side were enlarged, adherent to the integument, and without any pain on pressure.

He was observed to be in this state on the 16th of May, and was destroyed on the 13th of July, three veterinary surgeons having declared him to be glandered.

The post-mortem examination was conducted by Messrs. Dayot and Barjolin.

There were not any pathological alterations of structure, except in the head.

The right nasal cavity enclosed superiorly a large quantity of grumous, gluey, and grey-coloured matter. The thickness of the pituitary membrane at the surface of the cornets, at the superior extremity of the ethmoidal cells and the frontal sinuses,

was quadrupled. This membrane was red, of a violet colour in certain points, and pale, discoloured, blanched, and rugous, to the touch in others. In its substance were small white globules, isolated or confluent. There were two superficial ulcerations on the surface of the mucous membrane of the frontal sinuses, which enclosed a pultaceous matter white and more consistent than that which has already been referred to. The ganglions of the lower jaw were hard, and could scarcely be cut: they contained lymph of various characters, clouded and opaque. These lesions, therefore, united in presenting the characters of glanders.

M. Dayot was consulted respecting a great number of mares that had been covered by this stallion: he had occasion to see sixty or eighty of them, of which he found nearly forty evidently farcied.

M. Dayot has described the farcy lesions among these mares in a way that can leave no doubt as to their true character. They were principally found about the shoulders, the superior parts of the neck, and the genital organs. Between four and five months of treatment were requisite to remove the complaint.

M. Dayot concluded with much reason that the source of this farcy affection was the application of the glanderous matter that flowed from the right nostril of the stallion in leaping the mares, or smelling at the genital parts, or seizing them by the shoulders and neck, as he was accustomed to do.

M. Dayot inoculated a horse and a mare with the matter that flowed from the nostril of this horse; he also applied some of the discharge to various parts of the skin. The mare lived three weeks, gradually wasting away. The horse lived much longer.

M. Leblanc remarks, that these facts are exceedingly important. They compel us to draw this conclusion, that a horse labouring under chronic glanders may transmit either that malady or farcy under certain circumstances, or may not transmit either of them.

A CASE OF COITION AFTER IMPREGNATION.

By Mr. KING, Sen., V.S., Stanmore.

HAVING, hitherto, always entertained an opinion that the mare or cow would not admit the male after impregnation, and never having met with a well authenticated case before, I had almost

become convinced that my notion was well founded, but the following case, though a rare one, has, I confess, upset all my conception on the subject. If you think it worth a niche in your Journal, you are welcome to it.

On the 16th February last, I was called to a mare under the care of a Mr. Osmond, a very respectable farmer at Willsden. On being told that her womb was coming down, I stated my belief that the case was one of approaching abortion. "Oh! that can't be," said Mr. O.; "she was covered only a week ago." However, in two days more, she cast a small foetus, which appeared to have been dead ten days or a fortnight.

On inquiry, and referring to the entries in his book, it appeared that the mare was covered several times during the season of 1842, and the last time was on October 3. She was supposed not to be in foal, and that belief was strengthened by her very willingly admitting the horse on January 11, 1843. She was put again to the horse on January 21, again on February 2, and finally on February 11; proving that one fact is worth a hundred conjectures, however plausible.

A CASE OF RABIES IN A HORSE.

By Mr. W. H. COATES, V.S., Gainsborough.

AN aged brown horse, the property of Mr. John Corringham, of Misterton, had fed well and done his accustomed work. On Friday morning, December 22, 1842, nothing unusual was observed, until the man began to harness him about seven o'clock, when he was observed to breathe somewhat laboriously. The servant thought that it might be from over feeding, and would soon pass away. He was a remarkably good-tempered horse, but was now observed to snap at his companion while he was feeding.

He was sent to some light work with the harrow for a few hours, and was brought home breathing quickly, sweating and trembling.

I was sent for in the afternoon, and it was dark when I arrived. I found him much excited, his head erect and the respiration hurried, particularly when any one touched him; there were cold sweats and trembling, an anxious countenance, and a peculiar twitching of the angle of the mouth and the face generally. The pulse was 60, full and oppressed. I took full eight pounds of blood

from him, had him rubbed dry and clean, and said that I would call again in two hours. He was then much as before, but appeared dreadfully excited at any sudden noise. There was a peculiar snapping and grinding of the teeth, and he voided small portions of dung frequently.

At 12 P. M. the breathing was a little more tranquil. I gave bol : cathartic ʒviiij, and left him for the night.

At 8 A. M. on the following day I was warned, in going up to him, that he had made frequent attempts to bite. I found him perfectly conscious and obedient in every respect to his groom, but exceedingly irritable, snapping his teeth and attempting to bite. The eyes glistening—every sudden noise startling him—holding up a stick terrifying him—and he snorted dreadfully; yet his breathing was at times nearly or quite tranquil—pulse 72.

I had him led to the trough, when he drank a small quantity, and then seemed disposed to return to his old stable and join the other horses; but I had begun to have a suspicion of the real state of the case, and made very careful inquiry. A dog of the old English mastiff breed, rather savage in disposition, had on the 14th September last been supposed to be rabid; he was well on the preceding day, but in the night was heard howling, and in the morning he was found at liberty, but frequently uttering a kind of choking noise. His appearance created considerable suspicion, and he was secured and chained to a tumbril, but very shortly had entangled himself in his chain and was choked. He had bitten a pig in the nose, and drawn blood. That animal has since been fed without any apparent bad consequences, and was killed a month ago.

At 4 P. M. I found the horse breathing in a hurried manner, and frothing at the mouth. I offered him a lock of hay; he snapped at it, and, when I teased him a little with it, he came towards me open mouthed, and then as suddenly retreated to the farther end of the box, apparently much terrified, and violently snorting. After that he came forward grinding his teeth, holding the head as high as if gazing at the roof of the stable; then pawed a little, coming forward as if inclined to be vicious, and immediately retreating. Holding up a stick made him suddenly draw back. His owner informed me that he had been much worse since they had offered him water this afternoon, which he drank. I had some placed before him; he plunged his muzzle into the bucket, and greedily swallowed a few mouthfuls, but this seemed a great effort to him.

Between six and seven o'clock he became exceedingly violent, rushing open mouthed at the door and walls, and at length

forcing open the door he got into the yard and galloped round it once. He was now almost unconscious, and the man drove him quietly into his box, where he had not been many minutes before he died.

25th. Post-mortem appearances.—The intestines healthy, their contents semifluid—the stomach free from disease,—its contents fluid—the liver of a clay yellow-like appearance—the lungs patchy, and having a peculiar inflammatory blush—a coagulum in the right and left ventricle of the heart. The internal structure of the heart presented a modena or deeper red than is usual.

I now come to that which induces me to form a more confirmed prognosis; namely, the extensive inflammation of the larynx with considerable ecchymosis on the epiglottis and rima-glottidis and extending to the pharynx, the dorsum of the tongue being almost blackened. In the brain there was slight congestion on the meninges, and most so on the right lobe, their internal substance, however, being free from disease.

A LETTER FROM MR. PRITCHARD TO MR. PERCIVALL ON THE EXISTENCE OF A PISIFORME BONE IN THE HORSE'S KNEE.

Dear Sir,—I TRUST you will pardon my calling your attention to an error in your description of the horse's knee. Now that non-veterinary practitioners are ascertaining the value of our tactics, it is necessary we should be correct, if possible, in all we say about the horse.

In your work, published in 1823, you state the carpus to be composed of eight bones; and as Professor Coleman, in his lectures, described the knee as possessing eight bones, I concluded that you followed his description, and that, by this time, you had discovered the error, and so passed it over; but I find you, in *THE VETERINARIAN*, still committing the same error. Professor Coleman called the quadrangular bone at the back of the carpus the os pisiforme; and a second, also behind, and at the posterior part of the os trapezoides, a small pea-shaped bone, was the trapezium. You have very properly given the name trapezium to the large quadrangular bone, and afterwards describe the pea-shaped bone at the back of the os trapezoides as the os pisiforme, making up, with the three bones in each row, eight bones. You

will, however, find, on reference to the joint, that there are but seven bones in the carpus, and, in point of fact, no pisiforme bone in the horse's knee.

I am, my dear Sir, yours truly.

Wolverhampton, April 11th, 1843.

MR. PERCIVALL'S REPLY TO MR. PRITCHARD.

Dear Sir,—You must, in your own mind, have long ago denounced me as extremely remiss, or actually rude, for not noticing, in any way, your friendly communication, dated so far back as April the 11th. You will, however, forgive this apparent negligence when I tell you that it has been caused by indisposition, and that of a character which, for several weeks, quite unfitted me for business of any kind.

I find, by reference to my "Anatomy of the Horse," that, on the subject of the "Bones of the Knee," I have, at page 52, expressed myself in these words:—"It (the knee) is composed of seven small bones: in some instances, an eighth has been found."

I have some recollection of the question concerning the eighth, or pisiforme bone being mooted at the time I was a pupil at the Veterinary College, and, if my memory serves me well, the bone, by maceration of some *carpi*, was, after diligent search, discovered. This circumstance constituted the ground of my assertion, that "in some instances an eighth has been found;" and not any implicit reliance upon what was taught by Professor Coleman on Anatomy. Stubbs, Girard, Bourgelat, Blaine, and Youatt, all speak of the bone in question*; and I cannot help thinking, if you will take the trouble to macerate some few *carpi*,

* Bourgelat asserts, that "these bones are disposed in two rows, four in the first, three in the second, and two a little out of the rank, and termed the pisiforme bones. These do not exist in either cattle or sheep."

Girard says, "In some subjects we find, at the posterior surface of the lower range of the bones of the knee, two very small osselets, or, sometimes, only one, rounded and pisiforme."

Blaine affirms, that "in the recent subject there is commonly, but not invariably, found an additamentary osselet, of the shape and size of a pea, situated behind the trapezoid, with which it is sometimes articulated, and, at others, simply adherent. When it exists, it certainly more properly deserves the name of pisiforme than that of trapezium.

Youatt, in his first edition, states, that there are "six bones arranged in two rows, three in each row, with a seventh placed behind, to which an eighth is sometimes added." In his second edition, he says nothing of this eighth bone.

Percivall says, again, in his Anatomy of the Horse, "The pisiforme bone is not invariably present: in some instances two are found."

but that, in one or more of them, by very careful search, you will be able to find a pisiforme bone or two.

In conclusion, permit me to thank you for having brought the subject afresh *sur le tapis*: as you very properly observe, "now that non-veterinary practitioners are ascertaining the value of our tactics, we should be correct, if possible, in all we say about the horse." The only way to be correct is freely to examine ourselves and one another on any doubtful or disputable points. In the present instance, it has struck me there was no better way of effecting this than that of making your letter and my reply to it professionally public; and I trust your opinion will coincide with mine in this. Others, perhaps, may have something to say on this subject as well as ourselves. You and I can have but one object—the arrival at truth.

W. P.

ON STRICTURE IN THE ŒSOPHAGUS OF THE COW.

By Mr. W. HAYCOCK, V.S. (Member of the Royal Veterinary College, Edinburgh), Huddersfield.

To the Editors of the "Farmers' Magazine."

Gentlemen,—I BEG leave to send you the history of a case of disease in a cow, of which I lately had the management. The disease to which I allude was stricture of the œsophagus; an affection rarely, I believe, observed in the lower animals, which, perhaps, in a great measure may account for the silence of writers upon cattle pathology respecting it. Mr. Blaine, in his work, the first edition of which appeared at least eighteen years ago, devoted just seven lines and a half to a description of its symptoms, situations, the part affected, and the mode of treatment; so that I leave every inquiring reader to judge for himself as to the amount of information he will be likely to derive from the perusal of so short an article. Mr. Percivall, however, does not pass it over so lightly; he devotes about three pages to it, but his observations have reference only to its existence in the horse. Professor Dick, in the article "Veterinary Science," written by him in the seventh edition of the "Encyclopedia Britannica," does not even allude to its existence; while Mr. Youatt, in his work published by the "Society for the Diffusion of Useful Knowledge," applies about half a page, or scarcely that, to the elucidation of the disease in question; and informs us that during the whole of his practical career up to the period at which he wrote—which practice must

have been very extensive—he never met with more than one case of this affection in the cow. Seeing, then, that so little is said respecting the existence of such a disease in the above-named animal, I may deem it a sufficient apology in thus venturing to give you the history of a case, together with a few observations upon the subject—a subject so palpably overlooked, and at the same time, I may say, so intimately connected with our interests, that it cannot fail of proving of some little utility.

The cow affected, as I have intimated, was the property of William Brook, Esq., one of the magistrates of this borough. The history of the case is as follows: The animal was in the daily habit of receiving an allotted portion of cut turnips in a raw state, and on one evening, about two or three weeks after Christmas last, the usual quantity was placed before her, and after she had eaten about one-third of the whole she suddenly exhibited symptoms of choking. The abdomen became greatly distended, while, every four or five minutes, the hind extremities were brought forwards, the back thrown into an arch, and the muzzle protruded as though the animal was endeavouring to vomit. These violent symptoms in part subsided; but for some weeks after, whenever she took food, they returned with more or less violence. Sometimes, in consequence of eating, the animal would be thrown into such agony, that she would leap or place her fore feet upon the rack from which she fed, and, after violently straining for a considerable time, vomit every thing back again. She would then resume her natural position, as though nothing was the matter.

A cowleech residing somewhere in the country was at this time entrusted with the management of her, but all the medicine he administered was a pint of castor oil. He saw the case was a perplexing one, so he altogether abandoned it. For a time, however, the animal appeared to have recovered. Her food was masticated and properly swallowed, and for two or three weeks all was going on well, when a relapse took place, and most of what she ate was again vomited. Such was the account I received from the man who desired my attendance; and accordingly I lost no time in proceeding to make an examination, and ascertain, if possible, the disease under which the animal laboured.

I found her pulse beating with moderate regularity, but feeble. She was in very fair condition, and lively in appearance; in short, after the most rigid examination, I was unable to detect the least constitutional derangement, save the existence of a slight degree of debility. She appeared desirous of food, and I requested some to be given, in order that I might perceive its effects upon her, and whether vomiting would be produced. A small

portion of hay was placed before her, which she eagerly seized, masticated, and swallowed. I then stood watching her every motion for a considerable time, but could not perceive any unusual movement, or any thing like a desire to vomit. More hay was given, which was also swallowed, but I did not wait long before I saw a mass of something moving very gently backwards and forwards in the œsophagus. This continued for about half a minute, when she protruded the point of her nose, relaxed the lower jaw, and a portion of the hay she had just masticated was vomited, seemingly with the greatest ease. These movements were continued until the whole had returned, after which the cow appeared as desirous as ever for a fresh supply.

I was much puzzled, as every one may be certain that I should, for I had never seen vomiting induced in the cow before. I had heard of one or two solitary cases, but I doubted their truth. Here, however, to all appearance, was positive evidence; and the next step in the matter was to know the cause. After weighing the matter in my mind, I thought perhaps that the whole phenomenon, strange as it was, might possibly be induced by the lodgment of some foreign substance, or by the growth of a tumour at the back part of the mouth, or at the entrance of the pharynx, and that such substances giving rise to irritation in these parts vomiting was produced, or was the consequence of a kind of reflex action. It is well known that irritation, however slight, in these parts in the human being, will produce vomiting; and, judging from the similarity of the parts in both, I concluded that if the effect is produced by such a cause in the one, possibly it may in the other. I accordingly procured a balling iron, and minutely examined the structures, but found every thing in a normal condition. I was therefore necessitated, as it were, to suppose that the cause lay in the paunch or the first stomach—that, in short, a morbid excitement existed within this organ, whatever might be urged with respect to its want of sensibility.

Medicine was given to act upon the bowels in the first place, and, afterwards, to produce a sedative effect; and upon visiting the beast a second time, the cowman informed me that the vomiting was less frequent, and that the gruel which he gave her was retained altogether. I considered this a sign of amendment, but it proved of very short duration; for upon visiting her a third time, I found her worse than ever. Gruel and every thing she partook of was immediately returned, and she evidently laboured under great depression and feverish excitement.

It now, for the first time, occurred to my mind that *a stricture must exist in some distant part of the œsophagus*. I lost no time, therefore, in procuring one of Monro's flexible probangs, which

I passed with every necessary caution down the œsophagus. It proceeded for a considerable distance without any interruption, when it suddenly stopped, and force was required to again send it onwards, and at the moment it proceeded a quantity of thick and very fetid pus rushed from the upper extremity of the probang, which satisfactorily proved that my conjectures respecting the existence of a stricture were well founded. In a little time the instrument was withdrawn, and about two quarts of thick gruel administered to the cow, which did not return. I visited my patient again on the following day, and found her worse. The pulse was almost imperceptible, the extremities cold, the eyes sunk in their orbits, and a discharge of thick yellow mucus came from their inner canthus. The abdomen was distended with gas, pus discharged from the vagina, and when food was given to her the greater portion of it was, as usual, vomited back. I saw that the vital energies were rapidly on the decline—that the undigested substances within her, in consequence of the decline of the proper energies, were beginning to decompose, and that, unless a speedy alteration for the better took place, the termination would shortly prove unfavourable. Recourse was a second time had to the probang, which was again obstructed in the same part as on the day previous, but vomiting was never afterwards observed. The cow, however, in spite of every effort and every assistance, medical or otherwise, continued to sink, until at last she died on the 6th of March.

Examination eight hours after death.—I dissected out very carefully the whole of the œsophagus from one extremity to the other, and upon cutting it open and exposing its internal surface, *I found at the commencement of the œsophagean canal the situation of the stricture. The cuticular membrane of the canal at this part was gone for more than an inch, which of course exposed the muscular fibres entering into the formation of the organ. For five or six inches below the seat of injury, and for two inches above it, the whole was in a state of gangrene.*

The abdominal and thoracic viscera were healthy throughout; the paunch contained a moderate quantity of food, but the third and fourth stomachs were empty. In conclusion, then, I would remark that from the time that intervened from the first appearance of choking, which I mentioned as occurring soon after Christmas, and from the healthy condition of the abdominal and thoracic organs, that if measures of an efficient kind had been put into force at the first, when the constitutional energies were vigorous, the animal would undoubtedly have recovered. The injury in the first instance I cannot suppose was either very severe or very extensive; but the food which the cow constantly

received being of a rough or coarse nature, would necessarily keep up the irritation in the part, where probably a sharp piece of turnip fixed itself when the symptoms of choking manifested themselves, and which exhibited such extensive disease when exposed after death. Cattle always, or at least generally, when in health, devour their food very greedily, and the sharp angles of turnips when cut into slices are extremely liable, from the hasty manner in which they are swallowed, to lacerate or otherwise injure the interior of the œsophagus. I would therefore recommend every owner of cattle (as I invariably do when called to a cow choking from eating raw turnips), who partly feeds his milch cows upon turnips, never to give them in a raw state, *unless they are CRUSHED*, but to either steam or boil them—modes of preparation which will altogether prevent choking, and perhaps be the means also of preventing the loss of many a valuable animal.

[We shall be happy to receive the communication to which Mr. HAYCOCK alludes.]

ON THE EPIZOOTIC APHTHOUS DISEASE WHICH PREVAILED AMONG THE CATTLE, SHEEP, AND SWINE IN LE BESSIN, IN THE YEARS 1840 AND 1841.

By M. LEVIGNY, V.S., Cambes.

[Continued from page 295.]

IN addition to the last complication, of which I have spoken in the former article, there is another, much more serious, by reason of its not only causing the loss of the transversal ligament, but also that of the whole of the integument uniting the hoofs, as well as a portion of that of the pastern and of the coronet, as much before as behind the interdigital cavity. It comes away in a single piece, leaving a wound much larger than in the first case, having the same offensive smell, and discharging a kind of putrid matter, although, nevertheless, the feet are less swollen. Like the other, it usually shews itself more particularly in the hind feet; but it may equally attack the fore ones. Often the chasm is so great, that it extends even to the hoofs; and then the foot presents one large hideous wound. The interdigital ligaments having sloughed away with the integument, leave the lateral internal ligaments bare, together with the ten-

dinous insertion of the extensor muscles, as well as all the adjacent parts of these organs, which are also threatened with exfoliation and total loss, either from the same cause, or by contact with the atmosphere, or some irritating substances.

The loss of the insertion of the internal round extensor muscle of the foot is that which is most to be feared, and most serious: it is, in fact, this muscle stretching itself over the first and second phalagian, as well as on the synovial capsule that unites them. In this case, the articulation is found open, the synovia escapes, the cartilage becomes roughened, the other ligaments exfoliate, and the bones generally are attacked by necrosis. This disease is then incurable, unless it should be only one foot that is attacked. It is necessary to hasten the removal of this evil. If several bones are attacked, no other course can be taken than to destroy the cow, either for the butcher or salting tub. In order to make the different circumstances that accompany this disease of the feet in epizootics understood, I will narrate three cases that occurred among the cattle of which I had the care. M. Le Petit, mayor of Deux-Juneaux, had twenty cows, seven of which, after twenty days' previous disease of the feet, fell, and were not again able to rise. They were separated from the others. At the end of a week, four of them had very much improved, and were sent back to the herd. The three others, who were not cured, had appeared, at the commencement of the case, although lying down, yet not so ill as the four first. Their feet were less swollen. Nevertheless they could not, or would not get up, and it was necessary to beat them, or to have them worried by a dog, in order to make them rise. When standing up, their respiration became difficult, and they were almost suffocated. They could not walk ten steps without falling down again, after which it was absolutely impossible to make them rise any more.

On examining the feet of these three cows, in two of the first, in three of the second, and in four of the third (in the parts of the feet which I have already pointed out) a portion of the diseased integument sloughed off from the pastern. A strong eschar was then formed by the skin and the transversal ligament, which peeled off if those who had the care of them did not hasten to take it off. In the first of these cows, after the eschar of the wounds of the two hinder feet had come off, it was not long before the tendons, as well as the ligaments, separated. This took place in the four hoofs at the same time; so that when they were pressed, the articulation of the first phalagian, together with the second, became open, permitting a great quantity of synovia and of corrupted blood, to escape, containing many

tendinous or bony portions, of a blackish colour, and exhaling a rotten offensive smell. The four hoofs of the hind feet were affected in the same manner as those of the front feet, although in a less degree. This cow, which for several days could not rise, remained without shelter in the field, exposed to the ardent sun. I advised its master to kill it for salting.

In the second cow, the fall of the interdigital integument, as well as that of the transversal ligament, only happened in the two hind feet and one of the front. The fourth remained perfectly sound. She seemed to suffer much less pain than the others, and, also, from time to time, she stood up to feed, and then, perhaps, she suddenly fell.

The round internal ligaments of the extensor muscles gave way, at their insertion, in six of the diseased hoofs, leaving open the articulation of the first phalangan with the second. In all of them there was a discharge of synovia.

Although this cow ate all the grass that was cut for it, she visibly lost flesh, and her master despaired of her; but as she was too poor to be put to any useful purpose, they continued to feed and look after her.

At the end of ninety-two days the three internal articulations of the hoofs were cicatrised. The three external ones appeared also to promise the same result, forming themselves into small purulent reservoirs. At this period the articulations yielded no more synovia; but this fluid was replaced by a white matter, which made its way across one or several fistulæ that seemed for a moment to cicatrise. The old reservoir, however, opened afresh, or, when it was closed, other fistulæ appeared.

Notwithstanding all these untoward circumstances, the two hind feet, at length, cicatrised, and there remained only one fistula on the fore foot; and there it remains to the present day. This cow is at pasture: she feeds well; but her legs tremble under her when she is standing, and she walks on her heels with difficulty.

The spina ventosa exists in all the phalanges, according as they have been more or less affected. The hoofs extend when the animal walks, and they often cross and strike each other.

The third cow was brought to the stable and put on a good litter. The eschars of the four feet, formed by the skin and the transversal ligament, were taken away before the proper time of their fall. The wounds cicatrised very quickly, without any unnatural appearance. This cow ate well; nevertheless she grew thin. At length she ceased to rise. A yellowish colour was perceived in the places where the skin was thinnest and without

hair. Jaundice presently appeared, with loss of appetite, constipation, abortion, and, finally, death.

The prognosis which is connected with the fall of these eschars is very uncertain, by reason of the diversity of the parts which are found consecutively affected; for, besides the accidents of which we have just spoken, and after the simple cicatrization had taken place for a greater or less space of time, periostoses and exostoses will form, even of the bone of the cannon, along which eschars are produced by the tendinous parts.

The loss of the integument, as well as that of the transversal ligament, give place again to the deformity of the bone of the hoofs. Sometimes this horn is large, puckered, rugose, and padded. Its separating from the parts beneath forms several incomplete hoofs, adapting themselves to each other, and which, when they break, cause the animal to suffer dreadfully. At other times this horn is thin, slender, always rugose, brittle, and framed in some irregular way, almost like a ram's horn. The separation of the sole has also its complications. Strange bodies may interpose between it and the living parts, and form purulent reservoirs, almost always placed towards the point of the hoof. Very often, also, gravel is found, which is implanted in the fleshy sole, or between the upper and under portions of the sole. In these cases there are sometimes, in certain feet, three or four layers of horn, one on the other.

The diseases of the feet, which compel the cows to remain long lying down, lead to the wearing out and loss of the epidermis; and as that often happens on the articulations, particularly on the coxo-femoral, the ligamentous parts separate, and even the trochanter dies away. The articulation then opens, and the synovia escapes; purulent reservoirs form round the bone of the femur, and the bones of the hip and of the tibia contain a great quantity of white, purulent, and infectious matter.

When the cow drags herself on her knees, which frequently happens, the hair of this part falls off. The integument assumes the form of a considerable tumour, and inflammation of the articulation, generally connected with a purulent deposit, is observed. The inflammation increases, and the patient sinks either before or after the opening of the articulation. Loss of appetite, as well as diarrhœa, always precede this sad termination.

The disease may, without any known cause, be driven back on the articulation, and this, too often, is followed by lesions, generally mortal, as I have just described.

At the appearance of the epizootic, I had under my care several cows affected with hemorrhagical irritation of the intestines, or of the spinal cord. In both cases they remained almost always lying down, and they sunk under the complaint. It might be thought (but wrongly, I imagine) that in these cases the disease might have been diverted from its usual course, and then, instead of affecting the mouth and feet, these organs might have been spared. The contrary has generally taken place. The cows that were attacked most violently by the epizootic are those who have oftenest experienced these kinds of irritation, or who have afterwards died from old chronic disease. Perhaps, without the co-operation of these last affections, the cows would have experienced these kinds of irritation; but on this I will not permit myself to hazard a conjecture; yet during this year I have seen more internal diseases than in the preceding one, except those that have been brought on by suffering in the feet and articulations.

Some persons have spoken of diseases of the third stomach, or manyplus, which they regard as a complication of the epizootic. I have attended a great number of these animals, who were found under different influences, as well as in different states of condition. Not a single affection of the manyplus has presented itself, and therefore I may be permitted to doubt this complication until unanswerable observations have fixed my opinion.

Let us pass now to the treatment.

There are a great number of cows in Bessin. They constitute the riches of the country, and furnish the butter of Isigny. Several farms contain nearly or quite a hundred and fifty cows. They are pastured all the year in the open fields, where in the winter they are supplied with hay. They are almost in a state of nature, and many of them have never been attacked by this disease. This will astonish no one, when it is known that in farms of a hundred cows there are only stabling in which twenty can be accommodated; and, except when they are fed, very little care is taken about them. It will easily be conceived that, when the effects of the epizootic were beginning to be felt at the time of the harvest, it was very difficult, not to say impossible, for the farmers to gargle the mouth several times in the day, and to dress the feet of their diseased cattle, as well as to make repeated use of fumigations, fomentations, friction, and many of the means recommended by various authors who have written on aphthous disease.

In the commencement of the epidemic, the farmers did not make use of any of these means; and, as I have already said, the

cattle were left almost to themselves. The farmers brought them hay ; they mowed the tallest grass for them, and then left nature to act for herself. There were only a small number of farmers who, at the appearance of the disease, called in the veterinary surgeon or cow-doctor, for it was the common belief that there was nothing to do, and that nature alone would cure the cows. Those who did most only claimed the help of the profession when the disease was highly complicated, or the patient had become incurable.

It was also impossible during the spring, and especially the summer, to procure the quantity of roots and farinaceous food. At this period of the year there is but little herbage in this country, and there remains in it scarcely any grain. The farmers are compelled to confine themselves almost exclusively to grass, to clover, and to hay. In cases of illness, the farmers force these into the mouths of the cows that are unable to stand. Sometimes they force them with gruel, and they generally manage very well.

It is well known that it was during the deep snows of the winter of 1841 that the disease attacked M. Laurent's cattle, leaving no other exception than his fat hogs. A part of his cows were on a herbage pasture, on the border of the sea ; others were more than two hundred yards distant ; but all exposed to the intense cold of that season night and day.

By my advice, M. Laurent gave a mixture of cooked potatoes and the refuse of the cyder-mill, apples being very abundant this year, and, consequently, of very little value. They were given to the least valuable cows until the animals were satiated with them. This was afterwards replaced by meal, especially for those that were of considerable value. Two persons had the care of this proceeding, which was not a very laborious one, at first ; but if the cows refused this food a first and a second time, on the third day they were forced with a certain quantity of the provender.

This was the only trouble that was bestowed upon them. It succeeded so well, that out of four hundred pounds of butter, that they were accustomed to yield every week while they were in good health, M. Laurent did not lose a quarter of a hundred, even including the sick cattle. This diminution, however, must not be attributed entirely to the disease, for it partly proceeded from the state of the atmosphere, and partly from the great quantity of snow which fell.

The cows that were deprived of fresh grass could not eat, by reason of the disease in the mouth ; and those who suffered in their

feet experienced shivering fits, and then a trembling in the hind legs, as well as behind the shoulders. With this exception, the functions of the animal were in their normal state.

Before I was called to attend upon the cows, they had been bled and their diet had been changed. I blamed the farmers for this, for the animals ought not to have been reduced in strength, and I made them cease this mode of treatment. I also earnestly advised that the cattle should be fed as highly as possible.

I have just described what has been the result of this new regime, and admirable it was. The re-establishment of health to more than eighty horned beasts was very quickly effected, although several of them had diseases of the feet and udder. The snow melted; they were put again on good grass; and they returned to their usual state of health.

I selected for my example the diseases of this herd, for the cows would only take what was put into their mouths; they remained constantly exposed to an intense degree of cold; and I was also enabled to prove two important things,—first, that bleeding, as well as restricted diet, while they greatly diminish the milk, do not advance the cure; and secondly, that free air, whatever be the temperature, does not aggravate the disease,—on the contrary, M. Laurent had, by way of precaution, put the cows that were the most advanced in pregnancy into the stable. These were the beasts who gave the least milk. They seemed to suffer from the change: so true it is that a state of nature and of liberty is necessary and advantageous to animals. The cows that have suffered most from the epizootic were those who were attacked by it during the hot weather. They solicitously avoided the heat of the sun: the shade was indispensable to them, in order to avoid the flies that sting so dreadfully, and especially attack those who have diseases of the feet. They introduce themselves into the wound, and there deposit their eggs, which are not long in being hatched.

From all this it must be concluded that a considerable degree of cold, far from increasing the disease, seems rather to be favourable to a happy termination of it; and that, on the contrary, great heat impedes the cure. If, then, we wish to preserve the secretion of milk,—the most important object with regard to the interest of the farmer, and which the slightest cause often diminishes,—there must be neither excess of heat, diet, nor bleeding.

When I was called in, at the first appearance of the disease, to attend on either the milch cows or the cows that were in pasture, my first prescription was to feed them well, and to avoid a too damp pasture-ground, on account of the diseases of their feet.

When the pustules of the mouth had broken, I was accustomed to cleanse and dry them with some soft linen, and then to apply a lotion—a mixture of one part of nitrate of silver dissolved in twenty parts of water—by means of a brush of soft hair. I have employed also, for the same purpose, the per-nitrate of iron, but not so often, on account of the great number of cows and the difficulty of managing them; nevertheless, this application, where used, has seemed to relieve them, and facilitate the process of mastication.

If the place where these pustules appear is touched by the finger before the cauterisation, the animals suffer much, but after this operation they appear to have no farther painful feeling. Thus, when the brush was passed over these wounds for the first time, the cows, from intensity of pain, bellowed. The second application gave little or no pain.

This has been repeatedly proved, and the application of these means to the most diseased cows has restored to them the desire and power of eating two or three days sooner than to others suffering much less, but on whom cauterisation had not been practised.

Other caustics, which only demand a single application, may be used with advantage; and it is of importance that the milch cow should begin to feed as soon as possible, because two days only of abstinence diminish the milk for a greater or less period of time.

When the mouth was one continued wound, and the pustules covered the whole mucous membrane, I had the hair of the pencil replaced by some linen dipped in per-nitrate of iron. I had the per-nitrate ground, and I added some garglings of oxymel, repeated several times in the day. By following this treatment, a cow belonging to M. Lepaysan, of Caenchy, was able to eat grass at the end of three days. Nevertheless its mouth and its tongue had peeled through their whole extent, and exhaled the most fetid smell. I was surprised at the quickness of this cure.

At the first appearance of the disease of the feet, I cut away all the dead and horny parts until they bled: I then cleaned and dried the wounds, and cauterised them, either with nitrate of silver or per-nitrate of iron. If, in the beginning or in the course of the disease, considerable eschars, such as those of the interdigital integument and of the transversal ligament, seemed disposed to detach themselves, the cows should be housed as speedily as possible, in order to prevent the influence of the atmosphere, and the action of the sun and of insects. A quantity of good litter should be strewed for them and wholesome and substantial food given, in order to get them into a state to

support a treatment that may be long, but necessary. But if cows remain a long time, and are badly fed after the cure of the feet, they may sink into such a state of marasmus as never to rise again. Care and medicine are then useless, and the cows rapidly sink.

As soon as the eschar falls I dress it with the simple digestive ointment, slightly camphorated. This I cover with thin tow, on which is placed a bag filled with cold bran and water, care being taken that the bran is not mouldy.

When the wound is favourable, I replace the dressing with the simple cerate of lead. If, on the contrary, it enlarges and becomes ulcerous, I form a mixture of two parts of pulverised charcoal and one of red quinine in powder, with which I sprinkle the wound, and, instead of bran, I substitute powder of gentian.

If a kind of proud flesh rises and spreads, dressing of egyptiacum should be employed, and, if it assumes the form of grapes, I touch it with chloride of antimony.

The sloughing of the sound internal extensor ligament always draws after it a portion of the bone on which it is inserted, as well as of the synovial capsule of the articulation of the first with the second phalangien. In this case I close the opening with lint or tow, covered with camphorated digestive ointment.

I will not repeat what I have written respecting the sloughing of the other tendons, and their results.

If some portions of the bone are affected with necrosis, which is announced by fistulous ulcers, the borders of which project, and sometimes become reversed, I dilate the opening; and then, after having taken suitable care, I have the feet cleaned and examined, and, if there is much enlargement, I have recourse to bleeding, as much as prudence will permit, both on the tumefied parts around the pastern, and on the network of the plantar veins. It is here that we inflict the greatest number of incisions with the fleam, for the blood loiters here in a peculiar manner, and decomposes the neighbouring parts and forms collections of pus. Care, however, should be taken that the fleam should not penetrate too deeply near the ligaments of the feet, nor wound or touch the synovial capsules, nor the bone of the pastern, for this, instead of diminishing the inflammation, will sensibly augment it.

After having dilated the wound, I have the foot put into lukewarm water, in order to encourage the bleeding. Six or seven pounds of blood can be subtracted by this means, in certain cases. When the skin is thickened, and the vessels are enlarged and filled with black and stagnant blood, one blow with the

fleam will make the blood flow as rapidly as from a large vein. An ox belonging to M. Le Herisson, of Saouet, offers an example of this. A single blow with the fleam, given on the cannon, produced a stream of blood, in consequence of which the animal fainted and fell. This bleeding arrested an affection of the lungs that had, for a long time, been rapidly increasing.

After having had the feet bled and bathed I wrap them in emollient herbs, moistened with a watery infusion, several times a-day, and as soon as it is possible I hasten to detach the eschars. If the feet again became gorged with blood, I recommend another application of the fleam, and so on, until its entire disorgement. After having detached the eschars, I cauterised the opening.

When *spina ventosa* is developed, and the cow begins to walk again, I well rub in the populeum ointment* on the integument. I endeavour to bring back the hoof to its primitive state, by paring and well rubbing it with the foot ointment. If the animal walks on his heels, I place strong calkins on its feet. If it drags itself on its knees, I thickly pad a strong piece of linen and attach it to this part, for the double purpose of avoiding friction and preserving it from moisture, the consequence of which in such case is much to be feared.

When there are pustules on the teats, bleeding must be avoided as much as possible. As soon as the cows are milked, the udder should be washed with a *vegeto-mineral* lotion†, and dried with old linen. Upon this should be put a light layer of lead ointment with a small portion of some opiate. If a tumour appears at the extremity of a teat, a little bees' wax should be applied, and, most especially, the greatest care should be taken never to leave any milk in the gland.

If one or several teats are inflamed, the cow must be put into the stable, and emollient lotions and vapour baths applied. In general, these inflammations of the *mammæ* are treated like those brought on by other causes. It is the same with the different accidents that are complicated with this epizootic.

I will not conclude that which concerns cows, without refuting an error very generally diffused. It is said that the milk of the cow during the disease, and even for a long time after, is bad and unwholesome. It is not so. Before the attack of the epizootic, a pustular disease, almost similar, was prevalent in Bessin. According to several veterinary surgeons, it attacked men and

* This ointment is compounded of the black poplar buds, poppy leaves, and lard.

† The *vegeto-mineral* lotion is another term for diluted subacetate of lead.

animals. The cows' milk remained the same. In the epizootic, far from losing any portion of its good quality, the milk was of a more buttery character; and, all other things being alike, the same quantity of milk was produced after the disease, and better than before. This was more than the farmers could have possibly expected*.

Although pigs were principally attacked in the feet alone, the disease, nevertheless, did considerable harm, especially to dealers. It was much more serious when these animals had travelled a long way. The speedy loss of the hoof was always the consequence of this. The first thing that was perceived was the separation of the horn, and its immediate loss.

The distance which these animals travelled, without doubt, increased the evil, but was not the original cause of it; for in the farms of Bessin the hogs that had not travelled at all equally felt the effects of the epizootic. The greater part of them lost their hoofs, but at a considerable period after the attack of the disease. These animals seemed to suffer such extreme pain in the feet that they were not able to stand. They dragged themselves on their knees. The sows which gave suck more especially suffered. Many of them died under the complaint, as well as their young ones, who were often suddenly carried off. The younger they were, the greater was the mortality that prevailed.

The epizootic attacked sheep in the same manner and in the same places as the cows. In them it was an affection of the mouth, or the teats, as well as the feet. I have only had occasion to observe it in M. Taillepiéd's flock, and some sheep belonging to M. de Gouis, of Isigny, that I have attended. These last, which, at the first appearance of the attack, were grazing on the same pasture-ground with the infected cows, did not then experience any of the effects of the disease. They were not attacked by it until more than two months had passed after their separation from the cattle. I dressed both flocks with per-nitrate of iron. No difference was made between the lambs and the sheep, and in both the disease quickly passed away.

I will terminate this report by proposing a question, on which it will be important that there shall be no misunderstanding, and to which I believe sufficient attention has not been paid. The apthous epizootic—does it return a second or perhaps a third time, and attack the cows that have before suffered from it?

If it be so, we could seldom boast of having effectually cured our cattle. There would always remain some uncertainty and uneasiness. At present I have never seen a return of the disease. Several farmers assert that they have witnessed it more than

* This was not always or usually the case in Great Britain.—ED.

once; and M. le Chevalier, at Osmanville, asserts that one of his had been attacked a second time, but very slightly. Nevertheless, neither the one nor the other called in a professional man, although the case, if it existed at all, was well worthy of being examined and recorded.

These gentlemen are perpetually changing their cattle. In 1840, the epizootic had begun to attack them; in 1841, it began again to rage, but among their new cows, that had been put with the old ones. Have they mistaken one of the new ones for an old one? They pretend that they have not. Or might they not take for a second disease that affection which remained after the first had been badly cured?

MM. Poissy and Lebourgeois, already referred to, are also continually changing their cows; but they have not mentioned a single case of a second attack. They have, however, recorded that all their cows which were not ill in 1840 were so in 1841, with the exception of one of M. Poissy's, that has been twice spared.

On the other hand, the dealers in calves and heifers affirm that they have had several who have been attacked by this disease two and even three times.

Some of these cases, however, have not been stated with much accuracy, or positively; and, besides this, the length of time that has passed since the commencement of this disease is much too short to enable us to give a positive opinion on the subject. Time alone can resolve the question.

THE CHARACTER AND PROGRESS OF THE DISEASE IN SWITZERLAND.

An interesting communication from M. DE LA HARPE, M.D., of Lausanne, enables us to trace this disease, and to mark its character and treatment in Switzerland.

M. De la Harpe is supposed to be speaking:—

In the month of February 1840, the disease shewed itself in the village of Villars le Comte, in the neighbourhood of Moudon. Previous to that time it had not been recognised, nor had the authorities been apprised of its existence, partly because the animals were attacked one after another and not simultaneously, and partly because it did not make a decided appearance until several weeks after the animal had become infected. During February many cows fell victims to this malady, and the flayer, or skinner, found in them all traces of inflammation of the chest.

A cow that was sold to a person in Denezy, a neighbouring village, carried the disease thither and died. From that time the disease has prevailed uninterruptedly to the present moment, creeping slowly but fatally from one beast to another, and from one stable to another. The last-named place lost so great a number of cattle, that all the proprietors of stock have resolved to slaughter every animal that exhibited the slightest symptom of disease, as the only means of putting a stop to the ravages of this insidious foe.

The village of Villars le Comte was more fortunate, the disease disappearing of its own accord in the month of May. The explanation of this probably may be, that the peasants in this poor place rarely had more than one cow each, and this they got rid of as soon as they observed any suspicious appearance about her.

A cow from Denezy was, in the month of May, taken to the market at Romond, and there sold to a native of Freiburg, who sent her to the Alps for the summer. She was turned out on an elevated mountain meadow in June, where she became ill and died. This excited no suspicion until July, when another cow belonging to the same person, who possessed about eighty head of cattle, also sickened and died. After this, the cases of disease and death became so numerous, that information was given to the proper authorities.

The first veterinary surgeon who was called in did not recognise the disease. Others, however, who had seen it in the neighbouring country, pronounced it to be infectious, and recommended that the whole of the herd should be slaughtered. Fortunately, the mountain was in some degree isolated, and therefore there was reason to hope that the malady was as yet confined to the limits of this person's property.

In September all the animals were slaughtered, excepting two, one of which had been taken to a neighbouring mountain in July, and the other was conducted back to the meadow a few days before the slaughter. The former soon became ill and died, but not before he had infected a considerable number of the forty beasts with which he had been placed, and which herd it soon became necessary to think of destroying. Eventually, through this one animal, 120 head of cattle died or were destroyed. On post-mortem examination, many of them were found to be sadly diseased, which, while alive, had appeared to be in perfect health. The second beast that had been spared was now sought for, and found in a stable among six other cows.

The College of Health at Freiburg resolved to test the infectiousness or non-infectiousness of this disease. A man, there-

fore, was appointed to tend on this animal only, and was to approach none of the others. After the lapse of a few weeks the cow next to the suspected beast became ill, and eventually died of inflammation of the chest and lungs. Orders were immediately given to slaughter all the other cows which were in the stable, and it was found that the one that had first been taken ill was exceedingly infected, its next neighbour not so much, and the two that had been farthest off were quite healthy.

One of the diseased cows was six months advanced in pregnancy, and the lungs of the fœtus had already begun to be diseased. From this period the canton of Freiburg began to be regarded as free from contagion, and all quarantine regulations were removed.

In October, a cow was found labouring under this disease in Bulle, a place situated at the foot of the infected mountain. The authorities, having been informed of this, had three other cows belonging to the same stable slaughtered, two of which were already infected. The first of these four animals had been shut up in a stall next to that in which the beforementioned second of the two beasts passed one night on its way from the mountain; but the two had never come into immediate contact with each other.

In the canton of Waadt the disease seemed to have confined itself to Denezzy, if we except the case of a young heifer that had been bought, and, as it seemed wasting away, was slaughtered. It was found to have inflammation of the chest; but the disease had appeared under so chronic a form that the veterinary surgeon did not believe it to be the contagious malady.

PATHOLOGICAL ANATOMY.—My observations coincide with those of the *Recueil de Médecine Vétérinaire Pratique*, October and November 1840; with the exception of some slight difference in our estimation of the symptoms. The appearances which I have observed in different lungs agree precisely with the observations there recorded. When first I wrote, I was uncertain as to the origin of the inflammation, but now I am of opinion—

1. That the disease is a more or less acute or chronic inflammation of the diaphragm, the pleura, and the prolongations by which they are united to the lobes of the lungs. This inflammation appears, however, soon to pass away from the pleura, and even from every part connected with it, and it is that circumstance which has caused many French veterinary surgeons to be of opinion that it occasionally has its seat solely in the lungs, and that the pleura is not at all affected.

2. That the inflammation is not communicated from the pleura

to the parietes of the lungs, but to the vessels which run between the prolongations of them, and which are thus obstructed, partly by the coagulation of so much blood in the veins and arteries, and partly by the accumulation of phlegm in branches of the trachea.

3. That the hepatization and hardening of the texture of the lungs is a consequence of the obstruction of the small vessels of that organ, and hence arises that extraordinary thickening of the parenchyma.

4. That in the larger vessels wherein I have observed the process of obstruction, a small polypous or fibrinous concretion will be found, wherever the inflammation has been more than usually intense. This concretion becomes the focus around which the coagulation extends itself on every side. Each point of adhesion has always a centre of white fibrous matter. The free coagulation is black. The arteries and veins of the lungs become obstructed in a similar manner.

5. A similar process of coagulation takes place in the bronchii. A white jelly-like coagulation is first of all formed in them, which afterwards gradually hardens into lumps. These approach each other by degrees—become still harder—acquire a reddish hue from the admixture of a little exuded blood—obstruct the bronchi—attach themselves to the sides of the bronchi, and end by becoming incorporated with them. I am perfectly convinced that this is no plastic exudation of the mucous membrane, for the freshly coagulated matter floats about in the bronchi in cylindrical forms, almost resembling dew-worms.

As I have before said, it was on the 8th of October, 1840, that the existence of contagious pleuro-pneumonia was first observed in the village of Denez. From that time the strictest regulations were adopted, in order to prevent all communication between the infected animals and those in the neighbourhood and the surrounding districts. About the time of the commencement of these regulations three cows were killed in one stable, all of which were found to have been infected. A few days afterwards the disease was observed to be breaking out in another stable. Orders were given that all the beasts in it should be slaughtered, and this was done on the 22d of October. Eight animals were destroyed, and on post-mortem examination all proved to be infected. On the same day, a cow in a third stable was observed to be ill: it was destroyed on the 19th of November, and found to be affected by the disease; two other beasts in the same stable were also destroyed, and found to be infected. Each stable was thoroughly cleansed, fumigated, and purified, after the animals had been destroyed, and no others were placed in it until the disease subsided.

On the 10th of December a heifer, in a neighbouring village, that, three months before, had been pastured among some cows at Denezzy, was taken ill, and, on being destroyed, was found to be infected with pleuro-pneumonia. In this animal the disease had assumed quite a chronic form. The lungs were of a whitish red colour, and the cellular spaces between them were filled with a clear citron-coloured serum. The bronchi were obstructed by white and red coagulations of blood. The vessels contained very small pale-coloured clots of blood. The stable in which this animal was, was immediately shut up, and still remains so. The contagion spread no farther there.

On the 11th of December a cow, in a fifth stall, was taken ill, and shewed every symptom of contagious pleuro-pneumonia. On the 22d and 23d of December six beasts were destroyed in another stable; and, lastly, on the 2d of January, 1841, another beast, in a seventh stable, was slaughtered, which proved to be diseased. A general slaughter of all the cattle in the village was now ordered, for the uninterrupted progress of the disease, and its extension, notwithstanding the utmost care and strictness in following up the police regulations, proved, too clearly, the necessity of this severe measure. The slaughter was not, however, proceeded in with such haste as not to allow the cattle-owners time to derive some profit from the sale of the meat of those animals that were sound. The diseased ones were all buried. The skins were sent to the tan-pit after having been well prepared with lime.

Of the seventy-six beasts which, at the time of the slaughter, belonged to the inhabitants of the village, fifty-one were sound and twenty-five were slightly diseased. Two calves had died a few days previously, but not of pleuro-pneumonia. The cattle-owners received a compensation of three-quarters of the value of a sound animal, and half the value of a diseased one. The stables were, after this, without exception, subjected to a thorough purification and fumigation. The plaster was all pulled down, the old wood burnt, and the new washed with the chloride of lime; the litter taken away, every thing approaching to putrefaction carefully removed, and the walls washed with a fire engine.

Beside the anatomical alterations which I have already described, and that were more or less apparent in every slaughtered beast, the veterinary surgeon who resided at Denezzy remarked the following morbid appearance:—In many cases the chronic pneumonia was united with tubercles. In several of the animals the disease was in its first stage, and there it was found that the parts principally affected were the edges of

the diaphragm, the lobes of the lung, and chiefly the front one, the middle and smaller ones being less affected. In other animals, where the disease had gained more ground, numerous tubercles were formed, and they gradually softened, and collections of purulent fluid ensued. In most of them the pleura was thickly covered with plastic granulations. In a few, broad patches of a brown and blue colour were observed, which corresponded with those parts of the lungs that had suffered most from hepatization. In some the lungs appeared to be larger than they are in healthy animals.

The veterinary surgeon also stated that this disease ran its course very slowly, and frequently was not perceptible in the living animal until it had reached its height.

I have examined some portions of lung taken from animals that seemed, while living, scarcely at all affected, and found that in all of them the alterations caused by contagious pleuro-pneumonia were more or less apparent. The changes uniformly appeared to be of recent date, and not one shewed any trace of previous inflammation of the chest, still less of false membranes. The prolongations between the lobes of the lungs were neither thickened nor filled with serum, as I had previously always found them. Around the inflamed parts the bronchi contained polypous concretions of a whitish red colour, externally mingled with blood. These concretions were seldom attached to the mucous membrane. In other parts the bronchi were simply coloured by a fibrous bloody mucus.

The parenchyma of the diseased parts was marbled, of a dark red colour, filled with blood, and more or less hepatized. The red spots consisted of patches of a dark red brown colour (a simple collection of blood with hepatization), or of bright red (inflammation and red hepatization), or of rose colour verging into white (inflammation degenerating into white hepatization). This last species of hepatization appeared to me most peculiarly to appertain to contagious pleuro-pneumonia. The blood which presses into the parenchyma of the lungs becomes gradually decomposed, and loses its globulous and colouring properties, while the white and the fibrine coagulate, remain adhering to the parenchyma, and gradually form a firm white mass.

In my opinion the polypi in the bronchi arise from the same cause and in the same manner.

Most of the arteries and veins contain blackish clots of blood, here and there tinged with other colours, which are elastic and not adherent to the sides of the bloodvessels.

In one of the lungs the pneumonic disease had assumed a very peculiar character. The collection of blood was diversified

by spots of a dark reddish hue, and somewhat resembling ecchymosis, varying in size from that of the head of a pin to a hazelnut. These spots united themselves at different points, and, in one flap, covered it completely with a dark brown collection of hyperemia. The centre point of this half hepatized lung was darker and more compact than any of the rest. This kind of pleuro-pneumonia differed entirely from all that I had previously had an opportunity of observing.

When the cattle were slaughtered, the farmers and owners requested that orders might also be given to destroy the sheep and goats, and, as this request was seconded by the veterinary surgeon, the authorities granted it as a measure of precaution. Hence I was enabled to examine the lungs of fifteen sheep. Not any of them shewed traces of the pleuro-pneumonic change. In one a slight trace of chronic pneumonia, with formation of matter and tubercles, was found. Some contained isolated hard tubercles, which were just beginning to soften. In these latter I found two very extraordinary appearances. First, that the tubercles do not soften, as is commonly believed, but suppurate. Many of them which had reached the size of a pea were carefully cut open. In the centre was found one or more globules of a yellow hue among the greyish white substance of the tubercle. These globules, when pressed under the finger, turned into a yellow flowery substance resembling hardened matter.

Secondly, several of these tubercles, when cut open, were found to contain not matter, but a small clot of blood which swam in the middle. This clot could be lifted up and taken out on the point of a needle. Most of the tubercles which contained this clot of blood were perfect and uninjured, and adhered firmly to the surrounding tissue.

Magazine für die Gesammte Thierheilkunde, p. 4, 1842.

ON INOCULATION FOR THE MOUTH AND HOOF DISEASE IN CATTLE AND SHEEP.

By Professor HERTWIG.

HERR SCHWEP, veterinary surgeon in the district of Tennstadt, in his quarterly report for 1841, communicates some experiments on the inoculation of sheep for this disease, which I here copy, because they have been made on a larger number of animals than any others of the kind which have yet come to my knowledge. Herr SCHWEP says:—

From the prevalence of this disease in 1838, I, with many others, was led to believe that it arose not only from miasmatic influence, but likewise from infection. In order to ascertain whether I was right in my suspicion, and also whether it was possible to transfer it to some other part of the body where it might be less injurious to the animal, I made the following experiments.

The first was on a flock of 900 sheep, 160 of which were already lame. I had those selected in which the horn had not quite come off from the foot, but where it was so loose that a slight pressure of the finger would be enough to separate it. With the matter found in the hoof I inoculated 500 animals on that side of the ear which is most free from wool. In the course of twenty-four hours, considerable fever had arisen: in forty-eight hours, the inoculated places exhibited symptoms of intense inflammation, and in seventy-two hours, I found in many of them small blisters full of serum. On the sixth day I examined them all separately, and found that nearly every bladder had burst, and that purulent matter, of an unpleasant smell, was escaping from them. During the first ten days after the inoculation, sixty of them became lame, although in each the blister, or pock, had risen on the spot inoculated. That lameness, however, was not very great, and in general lasted only about two days. All the other inoculated animals remained free from the disease, though in some not inoculated it raged as much as before. I can only explain the circumstance of sixty becoming lame after the inoculation by the supposition that they must previously have been infected. Other experiments have been attended with similar results. I have not yet had sufficient opportunity of experimenting on cattle to be enabled to give any decisive results; but were I called on to give an opinion, I should say that inoculation would protect them also.

The contagiousness of this hoof-disease in our domesticated animals has been maintained and denied, as well as its origin from epizootic miasmata. Carefully instituted experiments, in places and times where the disease is most prevalent, can alone decide this point. In all the experiments hitherto made respecting inoculation, these conditions have not been attended to with sufficient exactness to render the result such as may be confidently relied on. For my own part, I have been led to the conviction that this disease is propagated by inoculation, by the vapour arising from the skin, by the breath, or by the use of the milk, and may thus be communicated to other animals, and even to men. Whether, however, any amelioration of the disease could be produced by inoculation, as is the case in sheep-pock, is a

question which farther experiment alone can solve. That inoculation could produce exemption from taking the disease again in its worst form is, in my opinion, problematical.

Inoculatory experiments, partly undertaken with this view, and partly for the purpose of inquiring into the contagiousness of the disease, have already been made by many persons, and, among others, by Buniva. (*Calendario della Soc. Agraria*, 1812, and *Annal. de l'Agriculture François*, tom. xlix, p. 360). Oxen and calves were inoculated with this disease, and the following was the result: in some, simple fever arose without any other disease; while, in many, an eruption about the mouth and hoof appeared. The former were ill only six days, while the latter suffered for twenty days, or more. In both the disease could be again induced by inoculation.

In 1815, Herr Brauell, royal veterinary surgeon, at Weimar, produced this disease in cattle and sheep by inoculation on the ear. In 1816, Professor Renner inoculated for this disease in Jena and its neighbourhood (see Dr. O. F. G. Hoffman diss inaug. de incitione. Febr. bullos epizooticæ, Jen. 1816). Subsequently, Wirth inoculated at Zurich (*Archiv. für Thierhielkunde Neue Folge*. bd. i, s. 227), as did my colleague, Dr. Spinola, of Berlin, and both with similar results. Rödiger, in his work (*Erfahrung über die bösertige Klauenseuche Chemnitz*, 1822), devotes a whole chapter to inoculation (chap. iv, s. 47, 55), and Dr. Bartels, of Helmstadt, has given some very luminous descriptions of inoculation (*ind. Oekonom. Neuigkeiten*, 1842). According to him, it protects the animal not only from a return of the disease, but also serves as a precautionary measure in cases of infection. A general and normal eruption is thus produced; and the equal and quick course of the disease when resulting from inoculation renders it easy and not expensive to bestow that care and attention on every animal which is necessary and beneficial. The farmer is thus enabled to avoid those diseases of the hoof, often so fatal, and the animals do not lose so much in flesh, milk, and growth. Draught cattle are also much sooner fit for work.

Dr. Bartels made use of that matter for inoculation which was taken from animals in which the pustules had become fully and generally developed. He also took it from the mouth about the third or fourth day after the commencement of discharge. He likewise endeavoured, as much as possible, to inoculate animals with the matter taken from one of a similar species, and even breed, and not from any others, if he could avoid it.

He inoculated in the following way:—a cow or sheep was fed, and, when it had done eating, its mouth was wiped clean with a woollen cloth, and then some of the mucous saliva taken with the

finger from the mouth of a diseased animal was well rubbed into the mouth and on the lips and tongue. The inoculated animal had not any thing to eat for, at least, an hour afterwards. The after treatment is the same as in other cases.

Magazin für die Gesammte Thierheilkunde, p. 389, 1842.

ON THE PRESENT EPIDEMIC AMONG CATTLE.

By Mr. J. HAYES, V.S., Rochdale.

My dear Sirs,—THOUGH differing in opinion with you on the principle of exclusion, as compared with that of dissemination of the knowledge of our art to the public, my opinion on this subject remains the same, or more confirmed. Every day's experience proves to demonstration that we may employ our time and talents much better than furnishing our clients with the means whereby they can, and will, dispense with our services. Yet your former kindnesses to me, and your herculean labours in the cause, and the honourable, straightforward manner in which you have conducted *THE VETERINARIAN*, also the fairness with which you have met your controvertists, whether as differing friends or malicious enemies, must command from me, and us all, the highest respect, esteem, and gratitude: therefore, by way of furnishing a little matter for *THE VETERINARIAN*, I will commence with a brief account of the late and present Epizootic as it as developed itself here of late. It appears to me to be an amalgamation of the symptoms of influenza with those of a late epizootic, affecting the lungs. Its first symptoms are, the rumen becomes distended with gas, there is a slight moan or grunt with colic pains in the bowels, quick breathing, the pulse 70; restlessness at first, followed by a listlessness and stiffness of the whole frame, with great tenderness of the spine and external surface. The bowels at first are constipated, followed, in a day or two, by violent purging, with coughing and painful breathing, &c.

I hear that it is very fatal still in some parts; but I have not had one fatal case during the last three months, although I have attended great numbers, consequently, I am unable to give you the appearances *post mortem*.

In order to fill up this communication, I will give you the following: On the 3d of September, 1840, I was requested to see a cow six miles from hence that had been ill fourteen days: she

had been attended by an old cowleech. When I arrived, she was just dead, but the owner desired me to open her; which I did. The only information I could obtain of her symptoms, &c. while living was, a grunting when turned round or lying down. She had voided very little from the anus since she began to be ill, but towards the last she discharged a little coagulated blood, mixed with mucus, with painful breathing, loss of appetite, and rumination suspended. On removing the sternum, and exposing the whole contents of the thorax, the pericardium appeared spotted with patches of inflammation. Some portion of the lungs was covered with tubercles. The heart and pleura were quite healthy. At the centre of the diaphragm there was an abscess just at the point of bursting; and, on opening it, about half a pint of grumous unhealthy pus escaped, with a piece of the muscular part of the diaphragm, about four ounces in weight, which had sloughed, and floated loose in the abscess. I now laid open the abdomen, and, tracing the intestines from the anus, the whole length from the anus to the extent of eighteen feet forward was so contracted and diminished in substance as with difficulty to admit my finger. Three feet from the fourth, or true stomach, I found the cause of all the obstruction. There was intussusception in an aggravated and organized form that I never witnessed before. The inverted portion was eight inches long, and had become united to the mucous linings of those parts of the bowels, both of which were filled with a black substance, composed of coagulated blood, in an advanced state of disorganization, uniting the folding parts of the bowels together in one impervious mass of a considerable size. The uniting portions had grown and adhered so fast together that the bowel could not be drawn back into its original position without dissecting and dividing these adhesions with the knife through their whole length—all shewing plainly that it must have been the work of some time and gradually proceeding, until the perviousness of the bowel became completely stopped.

And now, my dear Sirs, allow me to conclude with a renewal of my former complaint, that there is such a lack of contributions by those from whom we have a right to expect some valuable ones: I mean the great stars of the metropolis and its vicinity. Alas! where are they? With yourselves, and one or two excepted, I believe them to be takers in of knowledge, not letters out.

ON THE EFFECTS OF ARSENIC ON SHEEP.

By Messrs. DANGER and FLANDRIN.

MM. DANGER and FLANDRIN, who have performed many experiments with the view of determining the real extent of the poisonous influence manifested by arsenic on wool-covered animals, announce the following as among the latest results obtained by them:—A sheep, poisoned by a quantity of arsenic inserted under the skin, died in five days. To the last moment it had refused all kinds of food, and the quantity of arsenic in the urine had progressively increased. Another sheep, poisoned by a dose of an ounce of arsenic mixed with a handful of salt (the stomach was probably otherwise empty, although this is not stated), died, as the foregoing, on the fifth day afterwards. It was ill from the moment of having taken the poison, and, like the other sheep, it continued from that time to refuse all nourishment. This last experiment, if performed under the conditions we have above hinted at, would tend strongly to confirm M. Rognetta's theory—that arsenious acid becomes harmless to ruminating animals by being involved in a great quantity of food, its absorption being thereby hindered. One of the most important deductions drawn by Danger and Flandrin from their late experiments is, that the public health is not endangered by the sale of mutton from animals to which arsenic had been some time before administered for the cure of disease: for the presence and continuance of arsenic in the system is readily detected, first, by reason that the animals become ill, however small the quantity of arsenic absorbed; and, secondly, that they have never become well again until the last vestiges of the poison have been eliminated by the kidneys and other excretory organs. A sheep that survived after taking four drachms of arsenious acid, having been killed on the thirty-eighth day after, no part of the carcass was found, on the autopsy, to contain the least appreciable trace of arsenic. A dog to which the viscera were given to eat exhibited not the slightest sign of illness, nor could arsenic be detected on analysis either of its fæces or urine; and six persons, who partook of the muscular fibre as food, lived on it for twelve days without feeling any inconvenience or symptom distinguishing it from meat of other descriptions.

The dog that ate the viscera of three poisoned sheep did not experience fatal results, and, when killed on the ninth day from the reception of this food, exhibited a healthy internal

appearance, without any trace of arsenic whatever, the entire poison having passed off in the urine during the six days immediately following the introduction of it into the system. The harmlessness of the poison on the dog, as compared with the sheep, may be accounted for from the far smaller extent (about one-fifth) of the intestinal canal, as well as the much greater muscularity of the tissues connected with the digestive organs of the carnivorous animals: these causes render the digestion, absorption, and the secretions, generally much more active in the dog than the sheep.

THE EFFECTS OF MEDICINE ON HORSES.

By Mr. W. PERCIVALL.

ARSENIC.

THE common white arsenic of the shops—the *ACIDUM ARSENIOSUM* of the London Pharmacopœia—is a mineral so universally poisonous that vegetables, as well as animals, suffer and die from its influence. Seeds soaked in a solution of arsenic are deprived of the power of germination; buds immersed in it lose their capability of development; plants watered or rubbed with it, die; and to animals, without I believe an exception, arsenic proves a deadly poison.

Notwithstanding its universality and virulence as a poison, arsenic has long been introduced into medicine as a remedy for certain diseases, and has been, and continues to be, extensively used, both externally and internally. In minutely divided doses, such as the twentieth of a grain, continued for a considerable time, it is said by some to have a tonic effect upon man; to augment his appetite, improve his digestion, and increase his strength. In larger doses—from the twelfth to the sixteenth of a grain—arsenic has proved a valuable remedy in certain diseases of a periodic nature, and particularly in intermittent fevers, in which it has been known to succeed even where cinchona and quina have both failed. Over diseases of the skin arsenic has also manifested considerable power, both as an internal and an external remedy. Indeed, Sir Benjamin Brodie has shewn, by experiments on dogs and rabbits, that where arsenic has been employed externally, applied to wounds for example, the inflammation

arising in the stomach and intestines has been more violent than even in cases where the mineral has been given internally. The same eminent physiologist has likewise made it apparent, from his experimental researches, that arsenic acts as a poison by causing suspension of the functions of the heart and brain through absorption of it into the circulation; and also, that, though arsenic was but applied to a wound, or inserted underneath the skin, the animal died with the same symptoms of inflammation of the mucous membrane of the stomach and intestines as though it had been exhibited inwardly.

Administered to horses, arsenic is no less certainly poisonous than to other animals; though enormous doses of the mineral have been, on some occasions, given, without such effects following as might, from its known efficacy, have been reasonably looked for. A horse suspected of having glanders, a patient of my father's, was, at the suggestion of Professor Coleman, submitted to the efficacy of arsenic given in powder, made up into balls with linseed meal and treacle. On the first day a drachm was prescribed, and this dose was augmented by one scruple daily, for seventeen days, the horse consequently taking on the last day, in one ball, six drachms and one scruple of the mineral; making the aggregate of his doses seven ounces, six drachms, one scruple, or very nearly half a pound of arsenic in the course of the seventeen days, and yet he never once refused his food, nor had any disturbance of his pulse or respiration, nor evinced any pain or uneasiness. From the progress his disease had made while under the experiment he was now destroyed. His stomach bore evidence of virulent inflammation and its vascular lining was coated with coagulable lymph. The case constitutes one instance, among many, where horses have shewn, after death, intense gastritis, without having, during life, evinced any symptom of the existence of such disease.

The following experiment will shew by how much less quantity of arsenic some horses will be affected, even to destruction. Three horses having glanders were, after being subjected to treatment for their complaints which had failed in affording them any relief, submitted to the operation of the common white arsenic. Five-grain doses were prescribed to be administered daily, in balls made up in the ordinary way. On the fourth day, one of them, having during the interval become sadly disordered from his glanders, was shot. On the fourth day after this—the eighth from the commencement of the experiment—the balls having, since the death of the other horse, been administered to the surviving two, morning and evening, one of them was attacked with shivering, loss of appetite, symptoms of great abdominal

irritation, diarrhœa, prostration of strength and imperceptibility of pulse. The other was also similarly affected on the day following. The latter, however, recovered; while the former died, poisoned by the arsenic. In the end, the survivor was shot, on account of his disease having assumed the acute and incurable form.

Here we have an example of little more than two scruples of arsenic producing gastro-enteritis to an extent that caused the death of one horse, and put in jeopardy the life of another. Idiosyncrasy, and other circumstances, unmentioned, unobserved, or unobservable, will, probably, be required to account for such strangely discrepant results. One fact bearing on the explanation may, however, be mentioned here, and that is, the known difference, frequently coming under notice, between giving medicine in one large dose, and administering the same quantity in small or divided doses, at frequent intervals: it appearing, in the one case, that a large proportion of the medicine—especially of such a substance as arsenic, which is so sparingly soluble in water—passes out of the bowels unchanged, or, at all events, unabsorbed. Two ounces of cathartic mass, given in one dose, will be likely to purge a horse less violently and dangerously than a less quantity divided into drachm doses, and given at intervals of a few hours. I have frequently made the same observation in regard to mercury and some other medicines. Indeed, among horse-dealers, it is a trite remark, that a dose of physic broken into three or four parts “does a horse more good,” *i. e.* takes more effect upon him, than it would have done given in one dose. Dr. Philip, in advocating “The Influence of Minute Doses of Mercury,” observes, “It is remarkable that, notwithstanding the general and long-continued employment of mercury, it should not have been known that all its constitutional effects, not excepting complete salivation, may generally be obtained by such doses as *half, or even a third part, of a grain of blue pill taken three times a day*: that is, a dose only equal to the twentieth, or thirtieth, part of a grain of calomel; for a grain of calomel is equal, whether we regard its purgative, or, when divided into minute parts, its alterative effects, to ten grains of blue pill. In another place we find the same eminent physician setting it down as “the result of his own experience” (“and there are few,” he tells us, “whose attention has been more directed to the subject”), “that, although there are circumstances under which large doses of mercury are not only beneficial but essential, the quantity employed in this country has, on the whole, been, at least, *ten times greater* than that from which its most beneficial effects could accrue.”

As veterinarians, I think, we may admit that there is much truth in these remarks of Dr. Philips. No doubt, a great deal more medicine is given than comes into operation, the effects increasing nothing like in ratio with the dose; and that small doses are in general to be preferred, being more efficacious in proportion than large doses, providing they are given at short intervals, and for a length of time continued. In a case, or on an emergency where a certain palpable effect is required to be produced within a given time, there can be no question about the absolute necessity of administering a certain large or determined dose of medicine; but, when the case or circumstances are of a nature not to admit of immediate removal or palliation, on the contrary are such as can be benefitted only by the gradual working of the remedy and the elapse of time, the system is in general more perfectly saturated with the medicine, and less harmlessly so, administered in minute doses at frequent intervals than in larger doses at longer intervals. I am, however, letting the consideration of this interesting point lead me away from my immediate subject—the medicinal properties of arsenic.

About the time these experimental inquiries were making, what was called “The Tasteless Ague Drop” was in great repute: an empirical remedy, that was afterwards successfully imitated by Dr. Fowler, who found it to be a preparation of arsenic. FOWLER’S SOLUTION, as it used to be called, was an *arseniate of potash*: an alkaline solution of the mineral, which has since been introduced into the London Pharmacopœia under the name of *Liquor Arsenicalis*. This is much the most convenient and safest form of exhibiting arsenic in human medicine, and in general is that which will be found the preferable one by veterinarians: there being neither perceptible smell nor taste in the solution after it has undergone extreme dilution, it has always been by myself exhibited in the horse’s ordinary beverage—plain cold water. Should his delicately perceptible organs of smell appear to detect something foreign in his water, the suspiciousness—for the aversion seldom amounts to more—will be overcome by keeping the animal without any other but the medicated water. I will here transcribe two cases from my Register, which will, I think, sufficiently elucidate the effects of arsenic in minute division in solution.

CASE I.—In March 1813, a black horse, nine years old, in excellent condition, fine in his coat, very muscular, and having an appearance of being sound in constitution, with an appetite as good as that of any horse in perfect health, although the subject of glanders, was submitted to the operation of the same solution as was exhibited in the foregoing case.

March 21st.—He took $\mathfrak{z}\text{i}$ of the medicine in his pailful of water, and had the same repeated in the evening.

22d.—Two drachms of the solution twice a-day.

23d and 24th.—Three drachms twice a-day.

25th, 26th, and 27th.—Half an ounce twice a-day.

28th.—Five drachms twice a-day.

29th, 30th, and 31st.—Six drachms twice a-day.

April 1st.—For the first time he refused his food; in consequence of which the dose was given but once on this day.

2d.—His appetite being amended, he took half an ounce twice a-day.

3d.—He took five drachms twice a-day.

4th, 5th, and 6th.—He took six drachms twice a-day; though on the last day he again loathed his food.

7th.—He could not be induced to drink any of his water, and therefore seven drachms of the solution were mixed with a pint of water, and administered as a drench.

8th.—The same drench was twice repeated, notwithstanding his appetite had again become fastidious.

9th.—Only $\mathfrak{z}\text{vj}$ were given morning and evening.

10th.—Being more off his feed, the dose was reduced to $\mathfrak{z}\text{ij}$ twice a-day.

11th and 12th.—Only $\mathfrak{z}\text{ij}$ were administered twice a-day.

13th.—The same dose was given but once.

14th.—His appetite having completely failed him, the medicine was discontinued. His pulse is 60, and he has visibly lost much flesh, being reduced, from a fat and fine-coated horse, to a thin, rough-coated, unhealthy looking animal. No effect appeared to have been produced by the arsenic on the glanders, but the disease made its usual progress.

18th.—The animal was destroyed. There is, unfortunately, no account of the post-mortem state.

CASE II.—*May, 1812.* A horse, looking well in condition, and feeding well, with a pulse ranging between 40 and 50, and bowels in their natural state, but affected with glanders, having ulceration within both nostrils and enlargement of the sub-maxillary lymphatic glands, was subjected to the operation of arsenic.

May 16th.—The first dose administered was an ounce of a solution of arseniate of Potash, in which was contained half a drachm of arsenic*.

* The Fowler's solution employed in these experiments had, therefore, the strength of nearly four grains to the fluid drachm; whereas the *Liquor Arsenicalis* of the London Pharmacopœia contains but half a grain to the drachm.

17th.—Off his feed. Repeat the dose.

18th.—More off his feed ; pulse 60. Repeat medicine.

19th.—Eats little or nothing ; seems very sick. Continue the medicine.

20th.—Expressing a great deal of pain by pawing, gnawing his hay, &c. ; respiration quickened and oppressed ; failure of strength, manifested by staggering and all but falling when he moves ; pulse 90, and thready. Discontinue the medicine. At half-past ten o'clock, p. m., he died.

The first circumstance noticed, on proceeding to make a post-mortem examination, was a most oppressive fœtor proceeding from the cavity of the abdomen, which became so intolerable the instant escape was given to the gas with which the bowels were distended, that myself and others in attendance not only found ourselves compelled to compress our nostrils between our thumbs and fingers, but at length were obliged, so overcoming and disagreeable was the stench, to leave the box for a minute or two. As soon as we had recovered somewhat from the effects of it, we proceeded with our examination.

THE STOMACH exhibited no alteration upon its cuticular surface, but upon the villous existed a great deal of inflammation ; and the inflammation appeared in spots or patches. In places where the reddening was most intense the texture of the tunic appeared softened and disorganized ; and, in addition, the entire villous coat presented much increase of substance, or *thickening*. The inflammation extended into the duodenum, and also was, in places, apparent in the other small intestines ; but as for the large intestines, the cæcum and colon at least, they were in a perfectly gangrenous condition. Their villous linings, particularly that of the blind pouch of the cæcum, were both black and rotten, owing, perhaps, to the lodgment and longer detention of the medicine in these parts.

THE LIVER was paler than usual ; but otherwise without apparent change.

THE LUNGS were tuberculated, and, in other respects, shewed the prior existence of disease. They were, however, in addition, greatly congested, and quite black, a condition partly ascribable to the hard death the animal died ; but also, no doubt, owing to the arsenic—it being evident, from their odour, that they contained some of the same kind of gas which pervaded the abdominal cavity.

The former of these cases exhibits a good example of what we may expect from arsenic in solution, given in over-doses—in doses such as the system cannot support. The latter one instructs us

what doses are in general admissible; at the same time that it shews that the mineral possesses no anti-glanderian virtues whatsoever. From 3i to 3iv of a solution containing 3ss of arsenic in a fluid ounce appears to be a safe or medium dose for a horse of sound constitution; and as, by long or frequent repetition, we may, even by such doses, in time work mischief, it is a medicine whose administration should be narrowly watched. I have exhibited it in periodic ophthalmia, as well as glanders, but with no better success.

THE VETERINARIAN, JUNE 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

EDINBURGH VETERINARY COLLEGE.

ON Thursday and Friday (the 20th and 21st April) the annual examination of the pupils of the Edinburgh Veterinary College, under the patronage of the Highland and Agricultural Society of Scotland, and under the immediate superintendence of Professor Dick, took place in the Hall, in Clyde-street, in the presence of a numerous assemblage of the members of the society, and some of the most eminent of the medical faculty in the city.

J. Burn Murdoch, Esq., of Gartincaber, Chairman of the Society's Veterinary Committee, presided, and was supported by Sir George Macpherson Grant, Sir John Hope, Sir Charles Gordon, Colonel M'Donald, J. Gordon, Esq., of Carnbulg, Professor Low, Major Law, Henry Stephens, Esq., Mark Sprott, Esq., Small Keer, Esq., and several other members of the society who take an active interest in the advancement of veterinary science. Among the medical gentlemen who took an active part in the examinations, were Sir Wm. Newbiggin, Sir George Ballingall, Professors Graham and Miller, Drs. Gillespie, Mercer, Robert-

son, Knox, Dumbreck, Wood, Newbiggin, Sellers, Skae, Kerr, Dymock, &c. &c. Edinburgh; and Drs. Bruce and Williamson, Leith. Mr. Olden, sen. V.S., Cork; Mr. Brown, V.S., 6th Dragoon Guards, Mr. Tindal, V.S., Golspie, and several other veterinary surgeons were present and took part in the proceedings.

After a severe and searching examination on the Structure and Diseases of the Horse, and Domesticated Animals generally, the following gentlemen were found qualified to obtain diplomas:—Messrs. William Stirling, Edinburgh; James Baxter, Errol; George H. Balfour, Colinton, Edinburghshire; James King, Farnieside, ditto; John Wordie, Cumbernauld; John Thomson, Braco; James Dawson, Strathdon; Joseph Skea, Aberdeen; Matthew Glennie, Cupar Angus; John W. Glass, Coldston, Aberdeenshire; Peter Campbell, Walltree, Fife; Richard Brotherton, Waterloo, Liverpool; George Kirkham, Liverpool; Augustus J. J. Poett, London; William Boagg, Kilham, Northumberland; Alexander Whytock, Perth; John Spencer, Bakewell, Derbyshire; William Terry, Wells, Norfolk; Benjamin R. C. Gardner, Clapham Common; Thomas Proctor, Liverpool; William Barker, Stokesley, Yorkshire; John Kay, Pontefract, ditto; Thomas Loader, V.S., Basingstoke, Hampshire; and George Douglas, Surgeon, Melton, Leicestershire.

Four of these gentlemen, viz. Messrs. Brotherton, Proctor, Gardner, and Terry, were selected, on account of the excellence of their first examinations, as candidates for the prize given for distinguished merit, and after a long, minute, and varied examination, conducted by Professor Dick and Dr. Mercer, it was finally awarded to Mr. Brotherton.

The prize for the best dissection was unanimously awarded to Mr. Kirkham.

From the very satisfactory manner with which Messrs. Gardner, Proctor, and Terry, acquitted themselves on their examination in competition for the medal, a certificate of merit was awarded to each.

The Veterinary Association having, in the commencement of the Session, offered two prizes, one, for the best Essay read at the

weekly meetings, and the other for the best Essay on a subject to be fixed on by Professor Dick, to be awarded at the conclusion of the examinations for diplomas, both were gained by Mr. Brotherton, and one of them, that on Mammitis, was ordered to be printed for the use of the members of the Association.

A considerable number of those who have this year obtained their diplomas, had been apprentices or pupils of some of the most distinguished veterinary surgeons.

Mr. Youatt is now engaged in preparing an account of the history, uses, general management, and medical treatment of "The Dog." Taken individually, this animal is not so valuable as the horse, or cattle, or sheep; but in many points of view he well merits our notice, and a history of him and the services that he renders, and the diseases to which he is exposed, are well worthy of our regard.

Mr. Youatt would be thankful for any assistance with regard to these points, and especially those which bear on the treatment of this interesting, but, too often, ill-used quadruped—in what way, and to what extent his services may be exacted, and whether neglect and cruelty are increasing or diminishing in our respective neighbourhoods.

Any information respecting the management of the diseases of the dog would be welcome, and duly acknowledged.

R E V I E W.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hon.

A Register of Experiments, Anatomical, Physiological, and Pathological, performed on Living Animals; disclosing New Views of the Circulation of the Blood, &c. By JAMES TURNER, V.S., Regent-street, London. Part II. Longman and Co.

UNAPPALLED by the great names of HARVEY and HUNTER, our professional brother, Mr. James Turner, has made his second* appearance, and still “in battle array,” in the very field of science, wherein those distinguished medical heroes acquired their immortal fame. Harvey gave circulation to the blood; Hunter, life to it; Turner would give *gas* to it. “Harvey,” says Mr. Turner, “recognised a current of liquid *only* through the arterial channels; whereas there exists also a *gaseous* current, of *equal volume*, traversing the same vessels in conjunction at one and the same time.” And, in another place—“The greatest physiological error which has been committed since the days of Harvey is, the theory that the caliber of the arteries and veins of a healthy man are maintained by the circulation of sheer blood: the actual fact is, that it is a *joint gaseous and sanguineous circulation*.” These quotations making the meaning and object of our author clear beyond the possibility of doubt, let us now inquire into his *proofs* of the presence of air or gas; and after *that*, enter into some examination of his explanation of the phenomenon.

In limine, however, it will be right to inform our reader that Mr. Turner is in possession of an instrument, or rather a machine, consisting—to use his own words—“of a mechanical apparatus, by the instantaneous spring of which an inch and a half, or more, of a denuded artery—the carotid, for instance—of any living healthy animal is suddenly seized within a barrel; the instrument being so constructed that each extremity of the barrel acts *simultaneously* in the constriction of both the exposed extremities of the vessel; the caliber of the barrel being sufficiently ample to avoid the slightest compression of the imprisoned artery, except at both its extremities, which are hermetically sealed by instantaneous compression.”

* For the Review of Mr. Turner's First Register see THE VETERINARIAN for 1839.

“Hitherto,” continues Mr. Turner, “when physiologists have imprisoned the blood of a living animal in any large trunk—the carotid, for instance—of the space of two inches, between two ligatures, and have allowed three or four hours to elapse, they have invariably found the blood *coagulated*, and of a dark colour, upon slitting open the vessel. But when I undertake a sudden seizure of such a portion of artery of a living animal with the new instrument, and cause an *instantaneous imprisonment* of its contents in transitu, a result totally different is obtained.”

For this result we must turn back to Part I of the “Register,” published in 1839.

Herein, at page 43, Mr. Turner writes as follows:—“I lay bare the carotid artery of a living animal, availing myself of the aid of peculiar machinery, and *isolate* about two inches of the vessel, with its contents, *instantaneously*, and thereby catch the containing (contained?) fluid flying or in its transit, and, after allowing it to remain quiescent in a temperature of 60° for three or four hours, then slit the vessel open, what do I find—a fluid? Yes. Is it blood? I do not know. It appears to the eye like condensed steam or vapour, of a bright red hue, extremely thin and transparent: the colouring particles gravitate, and a limpid fluid floats on them. Not a particle of coagulum is to be seen nor detected hours afterwards: the red particles adhere tenaciously to the dish, but the delicate fluid evaporates rather quickly.”

For the idea of entrapping the circulating blood within its vessels in an *instantaneous* manner, and thereby procuring it, for the purposes of examination and experiment, in a condition approximating the nearest possible to the natural one, and for the invention of a machine effecting so desirable an object in a manner, to all appearance, extremely satisfactorily, let the results turn out whatever they may, it must on all hands be allowed that Mr. Turner deserves some credit. It will also be admitted, as might, perhaps by some have been anticipated, that Mr. Turner's experiment has exhibited the blood in a more attenuated or rarefied state than, out of the body, it was, perhaps, ever seen before; owing to the suddenness with which all connexion was cut off between the portion imprisoned and the mass of the circulating blood. After four hours—nay, after four-and-twenty-hours—this blood had not coagulated: a phenomenon Hunter would have ascribed to the suddenness with which it had been deprived of its vitality, but one that Mr. Turner attributes to the retention of the “blood's gas.” In the former “Register,” Mr. Turner gave us to understand that the present one should contain *proofs* of the presence of this gas; but, we

must confess, we have not succeeded in discovering any that bring conviction to our mind, that, in what we understand by "the circulation of the blood," *there is actually a gaseous as well as a liquid current*. That arterial blood, suddenly arrested in its course, may, and does, even from the moment of its arrest, commence and continue to evolve air, with which we know it to be charged, is, we think, demonstrated by Mr. Turner's ingenious experiments; the evolved gas, or air, being, at the time the blood was in actual circulation, in *chemical* combination with it—not, as we apprehend Mr. Turner's meaning to be, *mechanically* commingled with it. Will the same gaseous evolution result from the imprisonment by the machine of *venous* blood? We feel anxious for an account of his "venous experiments;" the one inserted in the present Register, being, by Mr. Turner himself, considered unsatisfactory, from the circumstance of the clasp machine requiring, on account of the tardiness of the current of the blood in the veins, "considerable modification." In the mean time, for his bold enterprises in the cause of medical science, and for his frank and faithful account of them, in a pamphlet that will be read with equal interest by surgeons and by veterinary surgeons, he deserves the acknowledgments of us all. Trodden as the path has been, and distinguished as the footsteps are traceable thereon, we think, with Mr. Turner, that the "whole truth" has not yet been elicited; and farther, that, from the novelty of his experiments, our author is in a fair way of telling a little "more truth."

PERFORATION OF THE BLADDER BY AN OSSEOUS TUMOUR OF THE SYMPHYSIS PUBIS.

By M. GASPARD BARTHELEMY.

THE case which I am about to state has never, so far as I know, been recorded in the history of human or veterinary pathology. Although the organic lesion which is here described is incurable, and, perhaps, can scarcely be recognised during the life of the animal, the case is a very curious and interesting one in an historical point of view.

A bay Hanoverian horse, of good constitution, and seven years old, three years of which time had been passed in the gendarmerie, and that had on no occasion exhibited the least symptom of illness, was, on the 25th of July, 1835, seized with violent colic. The veterinary surgeon was summoned, and, on my arrival at the stables, I found the horse in a state of much suffering, pawing with his feet, and lying down and getting up again without

ceasing. On a more careful examination I found that he, every now and then, placed his hind limbs out of the natural centre of gravity, and made violent, but useless, efforts to void his urine. Naturally believing that these were symptoms of retention of urine, I began to inquire what could have been the cause of it.

Having discovered that a great quantity of sebaceous matter, indurated and almost concrete, filled the extremity of the urethra, and presuming that this, and this alone, might prevent the emission of the urine, I endeavoured to remove it, by prescribing some injections and other applications, and then retired with the hope that the health of the animal would be speedily restored. This hope, however, being disappointed, I again visited the animal soon after midnight. After some consideration, I determined to examine the urethral canal from its commencement to the ischial arch, and found no obstacle to the passage of the urine. I then introduced my hand into the rectum, in order to explore the origin of the urethral canal and the state of the bladder, which I expected to have found distended with urine. To my great astonishment, I found it almost empty, curved on itself, and lodged in the pelvic cavity.

I thought, and very naturally, that this reservoir, unusually distended, was ruptured at its extremity, and that the urine which it contained had found its way into the abdominal cavity. It appeared also, through the parietes of the rectum and the bladder, that an osseous tumour, terminating in a point, existed on the superior surface of the pubis, just at the place where the bladder rested; but not foreseeing that this tumour could contribute any thing to the development of the disease, I did not take any serious notice of it, at least at that time.

Judging from the impression which this examination had made on my mind, I expressed to the officer my fears, too well founded, with regard to the termination of the case, and promised that I would return on the following morning. He was somewhat astonished, however, when the soldier informed him, an hour afterwards, that the horse had voided a considerable quantity of urine without difficulty, and that he seemed to be considerably relieved.

Somewhat puzzled by this, I accommodated myself to the new appearance of the case. I bled the animal, the state of whose pulse, and his evident suffering, seemed to indicate the propriety of this operation. I placed an emollient cataplasm on the loins, and prescribed some cooling drinks and injections.

This mode of treatment seemed to produce much good effect. The colic ceased in the course of the night, and on the following

morning the animal, who had passed his urine several times without difficulty, appeared to be in a comparatively satisfactory state. He was yet, however, considerably dissipated. He did not eat any thing, and he drank very little.

The same treatment, with the exception of the bleeding, was pursued during some days. No sensible alteration of symptoms occurred; but the horse remained in nearly the same state until the 31st of July, when hæmorrhage took place on the internal surface of the intestine, and the fæces became liquid and mingled with a considerable quantity of blood.

Having communicated to the proper officer my fear as to the result of the case, since these new symptoms had appeared, M. Bouley, Jeune, in quality of his situation as veterinary surgeon of the gendarmerie of the Seine, was sent for. This gentleman, being confined by illness, could not attend until the 3d of August.

The patient was then sadly enfeebled by a violent diarrhœa, black and fetid, containing clots of decomposed blood. The pulse could scarcely be felt, and the mucous membranes were discoloured and covered by petechial spots. In fact, the symptoms of prostration of strength were too evident, and foretold that the close of the case was at hand. The horse died on the 5th of August, the twelfth day after the first appearance of the disease.

The abdominal cavity contained more than twenty pints of a yellow fluid, plainly exhaling the smell of urine. A great number of fibrino-albuminous flocculi were floating in this liquid. Traces of recent inflammation were observed on all the principal abdominal viscera, particularly on the liver, the stomach, and the small intestines, the surfaces of which were partly covered with false membranes slightly adherent. The sub-peritoneal tissue corresponding to these false membranes was injected. The intestines contained a great quantity of a black fluid, of an infectious odour, and which seemed to be partly formed of decomposed blood.

The bladder, almost empty, lay, in a great measure, on the symphysis pubis, and presented at its inferior part, and near its neck, an opening through the membranes, round, larger exteriorly than at its base, and of an infundibulous shape.

An osseous tumour, situated on the superior face of the symphysis pubis, near its anterior border, was lodged in this opening, consequently penetrating into the interior of the bladder, and fixing it in the situation in which it was found. This tumour, which was about an inch and a quarter in height, was rounded at its base and terminated by a dull point a little irregular in its form. There also existed, on the left side of the neck of the

bladder, an accidental opening, composed of a false membrane incompletely organized, and which conducted the urine from the bladder into the abdomen through an ulcerated point of the peritoneum—a pathological disposition of parts which explains how this liquid could have penetrated into the abdominal cavity, although the wound in the bladder was situated outside of the peritoneum.

Such is the account of this singular death. In order to complete the subject, it will be necessary to inquire a little into the origin and nature of the tumour which was the source of all this evil.

It ought, perhaps, to be added, that these alterations of structure have in some cases been remarked in horses that have been long placed under the influence of the virus of glanders or farcy.

The horse that was the subject of this narrative, having exhibited the appearance of the most perfect health during the three years that preceded this malady, and the *osseous tumour* which was the cause of the mischief being in the pelvic cavity, it seems to us impossible to refer the development of *this tumour* to the *constitution* of the animal, or to any *physical lesion*. We must have recourse to the normal organization of the symphysis pubis for the explication of this pathological phenomenon.

It results from our diligent investigation of this subject, and from the observation of Professor Rigot, that there is no part of the skeleton of the horse in which the conformation is more variable than the anterior and superior surface of the symphysis pubis—in effect it is sometimes *concave*, at others *plane*, and often of an *irregular character*.

After the consideration of these anatomical facts we are naturally induced to believe that the *pubian tumour* which we are now considering did not depend on any *pathological cause*, and was nothing more than a *natural bony eminence, abnormally developed*.

If it is asked, whether we imagine that this osseous protuberance, which had undoubtedly existed for a considerable time, could all at once have inflicted a mortal blow on the bladder, we reply, that we know not, but that it seems to us probable that this lesion had been occasioned, if not all at once, yet in part, by a sudden motion of the bladder in a state of partial fullness, whether during a leap or a fall, or some violent effort.

It is also very possible that this perforation of the bladder might be the result of ulcerous inflammation, produced by the simple presence of the osseous eminence. In point of fact, we dare not affirm any thing positive on the subject.

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THE PRESENT INFLUENZA AMONG HORSES.

By Mr. W. PERCIVALL.

THE return of spring, or, rather, the change from cold to mild weather, has brought with it the looked-for influenza among our horses. As diseases in general, from a variety of causes, some of which are cognizable by us, some not, as years roll on, alter their character, intensity, and prevalence, so epidemics or influenzas differ a great deal in different years. In some seasons they prevail so generally that old as well as young horses become affected: ordinarily, the young—the three, four, and raw five-year-olds—are, with few exceptions, the subjects of them. In some years the severity or fatality of the disease or diseases constituting the influenza is such, that numbers of horses die of it, in spite of every kind of treatment that can be brought against it; in other seasons so mild is it in its character, that under almost any mode of management, and often without treatment at all, the patients recover. On some occasions the disease is of a nature that “hangs about” the patient for a long while without, at any period, placing his life in jeopardy, though in the end leaving him extremely out of condition and debilitated: on other occasions the disease manifests itself at once, and admits of being “cut short” by timely and proper treatment.

To the phrases *influenza*, *epidemic*, *epizootic*, *endemic*, *enzootic*, &c., no medical man of the present day attaches any definite meaning. Any disease may be epidemic, influenzal, &c., that happens to prevail to any inordinate extent at any particular season or time. One year an influenza will be purely catarrhal in its nature; another, it will assume the form of fever; another, it will consist in pulmonary affection; sometimes it will manifest itself, in an especial manner, in disordered bowels. This year the leading and prevalent symptom of the influenza is sore

throat: the disease, indeed, might, in most cases, take the name of *laryngitis*; some do occur, however, without this symptom. The sore throat is accompanied, perhaps preceded, by dulness, expressed in the eyes and movements of the horse, and by occasional cough, with fastidiousness of the appetite or actual refusal of food. In some cases *rigor* has been a precursory symptom. Seldom is there but trifling discharge from the nose, and often none at all. I have but in very few cases seen any thing like that profuse running from the nostrils which has so commonly characterized the influenza of former years. This may be called the *mild form* of the present influenza.

When the horse is brought to us, not with sore throat alone, but with fever and all its concomitants as well—with dejection, loss of appetite, accelerated pulse, heat and dryness of mouth, unnatural warmth of skin, with or without disturbance in the respiration, or with dry short cough, redness of the Schneiderian membrane, and only an appearance of discharge from the nostrils, or none at all, with, in fact, symptoms of bronchitis—then the attack of influenza may be regarded as of more importance, and of a nature to require skilful treatment. This alone has proved the character of several cases that have come under my observation since the commencement of the present spring. In some few instances the *abdominal viscera* have experienced disorder. An attack of diarrhœa, perhaps, has come on; or there has been, without any diarrhœa, pawing or other signs of uneasiness, indicating bowel complaint in the beginning, and, afterwards, sore throat and cough, and the other ordinary symptoms of the influenza, have appeared, and the case has proceeded in the regular manner. Many cases that have assumed the aspect of bronchitis in the first instance, and in which I might, had I not been forewarned of the consequences, been induced to bleed and otherwise deplete much, have, on the turn of the disease, manifested such a tendency to prostration and debility—to that state well understood by practitioners under the appellation “low fever”—that it has been perfectly evident that had I so depleted I should have done ultimately incalculable harm.

After I have said that what we commonly understand by “influenza” may consist of a disease of one kind, or of another and quite an opposite kind, or may be even constituted of a complication of diseases, it must be evident that any mode of treatment adopted must vary accordingly, and at one time or in one case be totally different from what appears requisite at another. A horse affected with the simple and just now prevalent sore throat and cough, unaccompanied by any febrile, or respiratory, or abdominal disturbance, will need very little medical aid. His throat

may be rubbed with the liniment. ammon. et terebinth; a bol. aperiens given, and abstinence and low diet enjoined for a few days, and he will recover. My plan of dieting is, to order that his food shall consist of hot mash *only* for the first day, which we all know by experience but few well-fed horses will eat; and thus I obtain a day of abstinence, being the one on which the aperient is given. The day following my patient is nauseated by the physic, and cares little about feeding. On the third day, supposing the aperient has mollified the dung, its action, if required, being accelerated by a little walking exercise in the fine of the day, scalded oats and green meat will be eaten with avidity: the throat may be rubbed, if required, for the third time, without stirring the hair; and three or four days more will in general complete the cure.

Should the case turn to bronchitis, a blood-letting may be necessary, and at this early period may be most safely and beneficially put into practice, and *freely* if deemed requisite; the other part of the treatment being such as the case requires. Even another abstraction of blood, if needed, may be instituted; but beyond this, particularly when the patient is neither strong nor in good condition, or when the disease has run to the sixth or seventh day, we can seldom dare to carry blood-letting farther. Our sheet-anchor now, supposing the pulmonic disease proceeding on its course, must be *mercury*. The hydrarg. chlorid., administered in the manner I have recommended on a former occasion*; or where from bowel disorder, or any other cause, calomel is not admissible, even in small doses, then the hydrarg. cum cretâ will be found, as an inadequate substitute, useful. While exhibiting mercury, we should take care to do all we can by counter-irritation: the preferable part to attack is the *breast*; that should be blistered, and may, besides, be made the seat of one or more rowels as well.

When abdominal irritation has presented itself as the forerunner of the attack, without diarrhœa, I have made the aperient into a drench, and combined with it either tinct. opii or sprts. æther. nitric., or both. Should diarrhœa be present, the bowels may still want clearing out; but a good deal towards remedying it is also to be effected by substituting water-gruel, or linseed-tea, for water, and changing the hay; abstracting the corn altogether.

* See my account of the Influenza among Horses in 1842, contained in THE VETERINARIAN for that year, pp. 336 et seq.

SINGULAR INJURY OF THE RECTUM IN A HORSE.

Communicated by Mr. J. OSBORN, Ashbourn.

I AM induced by the singularity of the following case to send it to your valuable Journal. It is that of an eight-year-old cart horse of great strength, and, of course, at this season, of great utility. He was going home from the mill, and either through the neglect of his rider, or misconduct on the part of the driver of a spring cart, he was brought in contact with the off-shaft, which entered the rectum per anum, and proceeded to the pelvis. The shaft there broke, and ten inches of it were left in the rectum. This was drawn out in a short time, and the horse walked home, a distance of five miles. I was requested to attend him, and to be there as early as possible, as the horse was in great pain.

On inserting my hand into the rectum I immediately found a rupture in the lining membrane of it, nine inches in length. The horse was bled, a dose of cathartic medicine given, and a lotion containing ℥ij of tinct. opii added to two quarts of water injected into the rectum, and repeated four times a-day. This was the 6th of May.

I saw the horse early on the following morning. The medicine was operating briskly; the pulse was 70; the appetite good, and he appeared as though he was in perfect health. The lotion was repeated, and a ball, containing pulv. opii ℥ij, administered, and a bran mash with tepid water was ordered to be his principal diet.

On the 8th to all appearance he was going on well. He ate, drank, and rested as though nothing was the matter. The pulse was 77, and the treatment the same as the day before.

At 10 P.M. I was again sent for, the horse being suddenly seized with pain, and expected to die every minute. I found him in great agony; the pulse was 95, and feeble, and the respiration hurried. I gave a large dose of tincture of opium, with ℥i of sp. nit. ether. The pain soon abated, and he recovered his former appearance.

9th.—He is quite free from pain. There is a constant desire for food. The pulse is 87, the extremities moderately warm, and the bowels moderately open. The treatment the same as the 7th.

12th.—Much the same as when I last saw him, except that the pulse was 72. The lotion was continued, and a little hay given him.

He continued in this state, eating and resting well, and look-

ing in a perfect state of health, until the 17th, when the following symptoms terminated his existence. On going to him early in the morning he was observed to have a swelling extending from the anus to the sheath, which was very much enlarged, as was the abdomen. He was constantly pacing round the box and beating the ground with his fore feet. The legs and ears death-like cold; the breathing very laborious. In this state he continued until ten o'clock, when I just arrived in time to see my opinion verified. As no arrangement had been made between the parties, the owner of the horse was unwilling to have him opened, therefore I cannot give the post-mortem appearances.

AN ACCOUNT OF AN ENORMOUS SEROUS ABSCESS IN A CART MARE, SITUATED BETWEEN THE UMBILICUS AND MAMMÆ.

By Mr. R. READ, Crediton.

ON March the 2d, of the present year, a black cart mare, the property of Richard Vinnicombe, Esq., of Thoverton, and master of the Thoverton harriers, was taken to my infirmary, a distance of eight miles: she was placed in a comfortable loose box.

On making some inquiry from the man who brought her, I elicited from him that about three weeks previously she had received considerable injury on the abdomen, by getting across the shaft-pole of the threshing machine. Shortly afterwards a swelling of the part commenced, and continued until it reached its present bulk.

Diagnosis.—There is a large collection of serum producing the swelling, or a sacculation of the colon and cæcum, from a dilatation of the abdominal muscles, the effect of a rupture of some of the fleshy fasciculi, which I have many times witnessed, and which I saw in one case during gestation. The fœtus in a mare, seven months gone, was completely sacculated in the abdomen from dilatation of its muscular and fascial parietes; notwithstanding which she did well, by being supported with compresses encircled over the part, until parturition had taken place.

In order to determine the contents of the swelling, a small acupuncture needle was introduced, and the fluid that oozed out caught in a graduated measure. It was a serous-looking

fluid, tinged with blood. On the application of nitric acid it instantly coagulated, thus satisfactorily demonstrating that it was a serous abscess.

The manual treatment consisted in introducing the trocar, and emptying the contents of the abdomen. Six quarts of serum were measured off, and compress rollers were applied around the abdomen, in order to excite adhesion.

3d, A.M.—The compresses were stretched, and the swelling tense. I introduced the trocar. Four quarts of fluid escaped; after which I re-applied the compresses. In the evening again I obtained four quarts of fluid.

4th, A.M.—Four quarts escaped, and, by manual compression, in the evening, three quarts more were obtained. The other treatment the same.

5th, A.M.—Three quarts were evacuated, and the fluid had a more turbid appearance. Finding no disposition to adhesion taking place, after each evacuation I injected, with an enema syringe, an agent of a stimulating character, and continued the compresses. On the evening of the same day, on introducing the trocar, three quarts of fluid were abstracted, the character of which was still more turbid.

6th, A.M.—Two quarts were drawn off.—P.M., Two quarts again withdrawn, and the injections and compress and rollers continued.

7th, A.M.—Three pints were withdrawn, and two pints in the evening.

8th.—The trocar was now allowed to remain in the orifice, and the fluid to escape, as it was secreted—injections and compresses as before. The fluid continued to drop during ten days, when the trocar was taken out, and a seton put in its place. A discharge continued, or was kept up for about three weeks, when it entirely ceased. Could all the discharge have been caught, it would have far exceeded nine gallons of fluid.

Medicinal treatment.—The pulse, two hours after the horse was admitted into the infirmary, was 44, and normal in character. About the third day it rose to 58, and was indicative of approaching debility. I then ordered a mineral tonic, the protoxide of iron, in order to increase the red globules of the blood, and afford an element that has an affinity for oxygen. I certainly expected to have met with greater debility in an earlier stage, when we take into consideration the quantity of serum lost, and so richly charged with albumen. Debility being pointed out by the pulse, made me at once endeavour to excite inflammatory adhesion by means of stimulating injections, and thus prevent so great waste of what goes to form the organized tissues. I should, however, have been fearful to have used stimulating injections,

or yet have passed a seton through the abscess in the primary stage, for fear of exciting too great an inflammatory action; yet there is but little to be apprehended after the animal is brought into a debile state.

I have frequently had very considerable inflammatory action in small serous abscesses excited by at once passing a seton through them. I consider it more prudent to give vent to the fluid two or three times before I resort either to the seton or injection.

After the animal had taken a few tonics, the pulse fell again to 42. This case proves that a vast quantity of serum can be lost by an animal, in comparison with the fibrinous part of the blood—that part which contains the red globules, which are the grand source of the vital action of that fluid.

Dietetic treatment.—This consisted in allowing food azotised in the maximum, or highly charged with nitrogen. Non-azotised food, or those substances containing azote in the minimum, are not in this case indicated, when allowance is made for the loss of so much albuminous matter. Nitrogenised food in the excess was requisite to keep pace with the loss of so much of the flesh-forming principle.

Non-azotised food, or that food which abounds only sparingly in albumen, and containing the saccharine principle, as in turnips, parsneps, or carrots, would have induced too great a debility; 1st, from the food containing saccharine matter, inducing diuresis; 2dly, from being non-nitrogenised, it could have afforded none, or not sufficient vegetable albumen for the formation of flesh, which, in this case, was desirable to be maintained, from the loss of so large an amount of one of its constituents. So richly charged was the serum taken from this abscess, that, by adding nitric acid in sufficient quantity, the whole of it was coagulated. The application of heat, in like manner, also did it.

THE OCCASIONAL EXISTENCE OF SHARP-POINTED SUBSTANCES IN THE MUSCLES.

Communicated by Mr. J. H. ROBINSON, Greenock.

I BEG to lay before you a case which came under my notice in October last, in the course of my practice, which may prove interesting, from the rarity of its occurrence.

It was that of a cow having a large tumour in her axilla, which had existed for some length of time previously to my being sent for, without producing any degree of lameness. The tumour had continued to increase, until, by the time I was called upon to examine it, much lameness had ensued. The tumour was hard and hot, exhibiting a considerable degree of sensitiveness, and fluctuating to a small degree.

I inserted a seton through the pectoral muscles from above downwards, which was attended with good effect. Afterwards, when I was in the act of dressing the seton, there protruded between its orifices something very sharp, which, on extraction, proved to be a darning-needle with the point outwards, and about three inches in length. I treated the abscess in the common way, and the cow was ultimately restored to health and soundness.

The query arising in this case is, How did the needle get there? There is no improbability in the supposition that the cow must have swallowed it in the act of feeding, and that it made its way through the esophagus towards the axilla, where the tumour had its seat.

[The existence of sharp-pointed foreign bodies in various parts of the frame is a circumstance of frequent occurrence, and much inflammation and pain are usually produced as they are performing their strange journey towards the surface of the frame. It is singular with what unerring skill the nerves and bloodvessels seem to be avoided. A certain degree of pain usually accompanies the whole of the journey, but very little injury is done to the neighbouring tissues.—Y.]

A CASE OF INTROSUSCEPTION IN A FOAL.

By Mr. ALFRED WALKER, V.S., Southam.

I WAS sent for on the 5th of the present month, at six o'clock in the evening, to a cart-colt, five weeks old, the property of Mr. Machen, of Gibraltar-House, near this town. I found him in great agony, having, at first sight, the symptoms of spasmodic colic. He had been in that state three or four hours. On making, however, a more minute examination, I concluded, from the following symptoms, that it was a case of enteritis, brought on, probably, by some displacement of the intestines, the nature of which I explained to the owner.

The animal was continually lying down and getting up again

almost immediately. He would roll upon his back, in which position he remained apparently easy for a few seconds. The respiration was irregular—the legs and ears rather cold—the body in a profuse perspiration. The pulse beat 125 times in the minute. He was looking frequently round at his flanks. When he got up, he would back himself against the walls of the stable in a peculiar manner, and his appearance altogether denoted that his sufferings were extreme.

I abstracted two pounds of blood, and administered lini olei \mathfrak{z} v, opii \mathfrak{v} j, and blistered his abdomen, which seemed to have no beneficial effect.

I saw him again on the same evening at eleven; he was then in as great distress as ever and continually rolling about the stable. His pulse at that time had sunk to 100 beats in the minute, and the other symptoms were as before. He had voided no fæces, but had urinated freely.

I considered the case hopeless, but repeated the above draught, and left him with an attendant for the night.

I saw him once more on the following morning at nine o'clock, and was then informed by the servant that he was better. He had been standing quiet for some time, which led the man to think that such was the case. It was very evident, however, that he was fast sinking: his pulse was 150 beats in the minute, and the other symptoms much aggravated. He continued about the same until seven o'clock in the evening, when he died.

On laying open the abdomen, an hour after death, I found, upon tracing the intestines, commencing at the stomach, that a portion of the ileum had passed into the same intestine situated posteriorly to it, and to the extent of more than two feet. This part was in a state of decomposition, particularly that which was invaginated in the other, and there was a considerable quantity of coagulated blood for some distance down the intestinal tube. Posteriorly situated to the diseased part, and anterior to the stoppage, the intestines were very much inflated. There was no inflammation existing to much extent in any other part of the intestines. All the other viscera were quite healthy.

ON PERFORATION OF THE BLADDER IN THE HORSE.

By Mr. W. MOGFORD, V.S., Guernsey.

IN the last No. of *THE VETERINARIAN*, I observed a case of perforation of the bladder, extracted from the *Recueil de Médecin Vétérinaire*, which forcibly arrested my attention; and as the narrator, M. Gaspard Barthelemy, observes that the subject is new to him, and that the symptoms are scarcely recognizable during life, I will, with your permission, state a case of this description, in a human subject, which came under my own observation.

Several years ago I was acquainted with an invalid in this island, the nature of whose malady for some time perplexed his medical attendants. The urine had a milky hue, and a strong fæcal smell. I also observed that in each effort of emission the urine was preceded by two or three slight puffs of wind.

After a lingering illness the patient died, when a post-mortem examination shewed a considerable ulceration of the rectum, from which there was a communication with the bladder, but so obscure, that it was several days before it was discovered, even with the assistance of a blow-pipe.

Two or three years after this, I was sent for to see a horse (the property of our late Lieutenant Governor, Sir James Douglas) which had received a wound in the hough from a stable-fork. A violent inflammation ensued, which also affected the neck of the bladder; and as he was unable to move or to lie down, he was supported in a sling, a part of which, a few days afterwards, unfortunately gave way, and left the horse suspended by a narrow strip underneath the flank. Soon after this occurrence, I observed that, in the effort to stale, a few puffs of air preceded the urine, as in the instance beforementioned; and my previous experience having enabled me to give a prognosis of the issue, I advised the immediate destruction of the animal, which was accomplished, and a post-mortem examination proved the correctness of my suspicions.

Among my memoranda I have also noticed some observations which I had recorded at the time, in relation to a case of castration detailed by M. Olivier, in *THE VETERINARIAN* for October 1840. The animal (a mule) died from hemorrhage, that could not be stopped. This is unfortunately a too frequent result, which, however, I feel persuaded, might often, if not always, be avoided by adapting the means I have described in *THE VETERINARIAN* for June 1839.

SOME CONSIDERATIONS IN FAVOUR OF THE LEGAL
PROJECT PRESENTED TO THE CHAMBER OF PEERS,
WITH REFERENCE TO A CHANGE IN THE POSITION
OF THE FRENCH ARMY VETERINARY SURGEONS.

By M. RENAULT, *Director of the Royal Veterinary School
at Alfort.*

[Continued from page 228.]

M. RENAULT having taken a rapid survey of the situation in which the veterinary surgeons, in every other country or Europe, are placed, quotes the following degrading description of the treatment which they receive in their native country:—"It is in France where veterinary medicine *took* its birth—where it is incontestably the most advanced—where it is taught with the fullest development, and to which most of the professors of the schools of Europe travel to improve themselves—it is in France, where the want of resources, and the numerous losses in our cavalry troops, ought to attach most importance to the worth of the veterinary surgeons, that they are exclusively placed in the lowest scale.

"It is in an army where each soldier may attain the highest rank of military honour, that there exists a class of men from whom is required the most extensive knowledge, the continual sacrifice of their time, a zeal that knows no abatement, a loyalty, a probity incessantly put to the test on occasions of the most important nature, and connected with the honour and safety of the country—it is to men who can fulfil all these indispensable and difficult compartments, that, even in our times of equality, it is still forbidden to have the satisfaction of witnessing the accomplishment of their natural and dearest and most honourable wishes."—(*Report of M. the Colonel Baron de la Coste to the Chamber of Deputies.*)

It has been replied to this objection, that when veterinary surgeons have attained the rank of officers they could not, without degradation, practise their profession in the country; and this would deprive them of the means of improving their position by the adoption of any other profession, and would also deprive agriculture of the advantages that it could derive from their long experience;—a false notion, scarcely worthy of consideration.

It has been observed, and almost officially, that the *obscure origin* of the greater part of veterinary surgeons would be an obstacle to their admission into the staff-office of the regiments.

But this is quite erroneous, for many of them are the sons of magistrates, and physicians, and lawyers, and landed proprietors, and a considerable number of whom, for years, principally occupy our schools. Another opinion has been started, which, however extraordinary it may appear, has made a deep impression on the minds of some, namely, "That the army has not any want of *learned* veterinary surgeons. That it wants, most of all, *useful farriers*, exercised in the practice of the principal operations of their art, and that the greater part of the operations are generally simple, and often *repulsive*. These would be readily, and without repugnance, performed by those of low origin, but would be often neglected or disdained by others who had risen to any rank in society. That there used to be farriers to look after the horses of the troopers before 1765, and then our cavalry was as good as now. That at the present time, in Austria and in Prussia, veterinary surgeons, plain men of little acquired knowledge, and few of them, properly speaking, more than *master-farriers*, exist. That this does not hinder the cavalry from being excellently managed, and more deaths do not occur than when the most skilful men are employed." I would pause for a moment to examine this matter.

In the first place I would observe, that the degree of learning which these persons affect to believe is incompatible with that of practitioners generally, has never, that I know of, seduced those who professed it from the study or the practice of their profession. I will add, that in Paris, where there are so many highly intelligent veterinary surgeons, it is precisely under the direction of these men that the best forges are found. Why should not intelligent military surgeons direct the regiment with the same or a great deal more zeal and intelligence than the working farriers of that regiment? Why do the military veterinary surgeons disdain to occupy themselves so fully as they ought in all the manipulations of their art? I do not, however, feel at all surprised that, in the present state of our cavalry service, there is much to regret; much that must be attributed to the veterinary surgeons themselves, but more to the superior officers. There is a false pride attached to the officer and to the veterinary surgeon. There is a consciousness, or the fear of something *unworthy* and debasing. It commences with the officers of the regiment, and it finishes by causing the veterinary surgeons themselves to imagine that they are degraded.

With regard to the observation, that the cavalry did not lose more horses when it had none but *master farriers* than it does under the veterinary surgeons, I would observe, that the horses

which composed the cavalry at that time were much stronger and heavier than those of the present day: more attention was paid to the horses—their food and stabling were better—their diseases were less frequent and less serious. If our losses are so great at the present day, it is because we have not paid sufficient attention to the forewarnings which the veterinary surgeons have for more than forty years continued to give, and the causes which annually carry off so great a number of the horses of our regiments. Is this the fault of science? or is it attributable to the too inferior position of the men to whom the care of the horses used to be entrusted?

The example of Austria and of Prussia has also been referred to.

Well! I will ask again, have we a cavalry like these states? do we lodge our horses in quarters as salubrious? do we exert for them the same care? do we feel the same attachment which the cavalry of Austria and of Prussia possess? If we did, we should, perhaps, like them, have less illness among our horses, and, like them, we should be able to do without learned veterinary surgeons. I cannot repeat it too often, that we fall into a serious error in dwelling so exclusively on that which takes place in their cavalry. We are much deceived if Austria and Prussia have not more mechanics and ignorant men as veterinary surgeons in their different regiments; and this is not the result of choice, but because no other men are to be found.

They have also felt there that the mediation of science is indispensable for the preservation of the cavalry, and, for want of veterinary surgeons who possessed it, they had to apply to human surgeons. I have already said that, in Austria and in Prussia, the care of the horses and the infirmaries is entrusted to medical men. Ours is a singular country. The government, after long years of neglect, has proposed to grant to the veterinary surgeons a position a little more honourable, and to give a slight proof of its solicitude for improvement to the only men in France who make the horse a complete and exclusive study; and it is among those who complain the most of the general indifference for the improvement and security of our horses that we meet with the greatest resistance to improvement.

What progress will the professed improvement of the horse make, if it is in this way that it is encouraged? In whatever point of view we examine the opposition that has so long retained our veterinary surgeons in the rank of sub-officers, it is impossible to find a reasonable foundation for improvement.

It is said that they fear the restraints of the service, and that

there will be a contest with regard to certain privileges. As to this, I have no personal opinion ; but I own that I find myself perfectly satisfied when I see the project presented by the Duke of Dalmatia, a military man, and who has given the clearest proofs of his determination to maintain order and discipline ; when I see him adopt, by two commissions of the Chamber of Deputies, that of the special project and that of the budget ; and when I see that it has been approved of by the majority of the general inspectors of cavalry, men fully competent to judge on such matters. There is one point more on which I would present a few short remarks.

The project of law submitted to the Chamber may be examined under three points of view, for it has evidently three distinct objects.

1. It increases the *pay* and the retiring *pension* of the military veterinary surgeons. This is its most apparent object. In that it does not meet with any opposition.

2. It implies the intention, declared also by the minister of war, of better arranging the situation of those military men, by admitting the veterinary surgeons-in-chief into the staff of the respective regiments. This has not received universal assent. I have discussed the principle of this and its effects.

3. It creates a new class of men—the *principal veterinary surgeons*. The commission of the Chamber rejected this creation : perhaps I may be permitted to defend it.

With the present organization, when a certain malady is severe among the horses of one or more regiments—when the veterinary surgeon of these regiments cannot arrest its progress, nor, perhaps, mark the cause—the minister of war has no other means to ascertain certain indications with respect to the malady than by sending for one or more of the professors of the school nearest to the regiment, or to apply to a veterinary surgeon in the neighbourhood. But in the present state of our schools, and during the delivery of the lectures, it is impossible for a professor to absent himself for several successive days without inconvenience and the interruption of the instruction of the pupils.

It is true that there may be veterinary surgeons in the neighbourhood. But, in the first place, they may not always have sufficient knowledge or experience for the difficult task of investigation and controul with which they are intrusted. It may also happen that the disease may be the consequence of the bad or insufficient forage, or the faulty construction or unhealthiness of the stables. If this is the case, the veterinary surgeon is expected to inform the minister of the real truth of the matter : but, may he be dis-

posed honourably to state the nature and cause of the malady? Will he run the risk of exposing himself to the reproaches or hatred of his fellow officer and former friend?

A principal veterinary surgeon should be selected from among the best informed and the most experienced men that the cavalry service contains—a man enlightened in his profession, and perfectly independent.

Another advantage will result from the creation of a principal veterinary surgeon or surgeons.

Until the present time the veterinary surgeons of the regiment have annually sent to the minister of war reports of the health or disease of the troops. What, generally speaking, have these reports been? What advantage has or could be drawn from them? Where in reality, in the offices of the ministry, are there men competent to judge of these matters—to appreciate them according to their value—to extract the useful materials and to judge of the importance of the considerations that are submitted to them? Are they, in fact, of much essential use in the management and improvement of the men or their horses? A certain number of principal veterinary surgeons should be selected, who should periodically meet in commission, and every report be duly considered, and the result communicated to the principal officer. Who does not see how useful such a work would be, executed by competent men? How many of the causes of disease and death among the cavalry horses are never duly examined or appreciated! The inferior position of the cavalry veterinary surgeon may principally be attributed to these circumstances. The board of commission of the principal veterinary surgeons should be located in the central part of the kingdom. The different facts observed, and the different results obtained in different parts of the empire, would be very easily and perfectly appreciated.

Another good would result from the annual reports of the veterinary surgeons of the different regiments. In reading them the commissioners would be able to distinguish those which are most scientifically or diligently written, or filled with the most enlightened medical views, or promising to be the most useful. The clearness and accuracy of these reports will always form the surest claim of the veterinary surgeons who apply for admission or advancement. This will be a powerful means of exciting emulation. The veterinary surgeons would be henceforth sure that their natural and proper judges were men who would most appreciate their *peculiar* worth, and would concur in promoting their advancement.

It also appears to me that this commission might be so ma-

naged as to establish, or rather to create, a greater number of veterinary infirmaries; which I do not hesitate to say, after what I have seen and heard, to be seldom properly organized in most of the regiments.

EFFECTS OF MEDICINE ON HORSES.

By Mr. W. PERCIVALL.

COPPER.

CUPRUM, *copper*, has from the earliest times down to the present been employed in medicine. It is thought that even Hippocrates used it as a remedy for the disorders of men; and there is scarcely a book on farriery, however old its date, in which we do not find some mention made of it as a therapeutic agent for the diseases of horses. *Blue vitriol*, *Roman vitriol*, *blue stone*, are the appellations the *sulphate of copper* formerly went by, this being the preparation whose use has been so ancient as well as extensive both in human and veterinary medicine.

In the metallic state, copper, like other metals, appears devoid of any medicinal power. Children, we know, swallow halfpence with impunity, and dogs have had bolusses composed of copper filings given to them, without their being productive of any apparent harm. Should any process of oxidation, however, take place from acids incidentally present at the time within the alimentary canal, an oxide of copper will be produced, and that may exert considerable medicinal action. The preparations employed in veterinary medicine are the sulphate and the acetate of copper.

SULPHATE OF COPPER, commonly known as *blue vitriol*, or *blue stone*—a compound of sulphuric acid and copper, presented to us in the form of beautiful blue crystals—has become as a remedial agent so great a favourite with the veterinarian, that for general purposes, outward as well as inward, no medicine in his pharmacy is oftener resorted to by him. Internally, blue vitriol has for years, I might almost say ages, been exhibited as a remedy—a specific, indeed—for farcy and glanders, and has been supposed to have a tonic or strengthening effect as well. In large doses its action becomes poisonous. The following cases will serve to shew the effect it takes on horses, as well as tend to exhibit its value as an antidote for glanders and farcy.

CASE I.—A black gelding had incipient glanders, in other respects manifested good health. It was agreed—between Pro-

fessor Coleman and my father—that he should take the sulphate of copper, in order that the effects of the medicine might be ascertained. He commenced with the dose of an ounce daily. On the day the fourth dose was administered the horse was violently seized with purgation, at the same time expressing nausea and occasional griping pains, and bursting out into profuse sweats. The medicine was discontinued, and all the symptoms of pain and danger ceased, and the animal once more recovered his former state of health, although, in the end, the glanders proved fatal to him.

CASE II.—A bay gelding, having chronic farcy, in an advanced stage, in one hind extremity, which was now in a state of extreme tension and suppuration, and was occasioning a great deal of uneasiness, had the actual cautery applied to his diseased limb, in a transverse direction, with a view of intersecting the absorbent vessels, and thus cutting off the communication between the sound and diseased parts. But this operation had not been performed many days before fresh attacks of the absorbents appeared in various parts of the body. The case now becoming desperate, my father felt desirous to make trial of “a new remedy,” one that had been “much lauded by a modern practitioner as infallible;” this was the sulphate of copper. It was administered in half-ounce doses for eight successive days, not only without benefit, but with the accession and rapid progress of glanders during its operation. My father expected to have found the stomach and intestines inflamed by the copper; but they proved totally free from alteration.

CASE III.—In June 1801, a horse came under my father's care, for treatment for farcy combined with glanders. Neither of the diseases having made much progress, it was thought advisable to give trial to the sulphate of copper, in divided doses. For the first eleven days one drachm of the medicine was given daily. On the four following days the dose was augmented to one drachm and a half, and this was given morning and evening, at the expiration of which period, the horse having lost his appetite and had some laxative effect produced on the bowels, the medicine was discontinued. Ten days afterwards, Mr. Coleman seeing the horse, was desirous that an experiment should be made on him with *digitalis*, the result of which shall be made known on a future occasion.

CASE IV.—There existing some difference of opinion between Mr. Coleman and my father respecting the cathartic powers of the sulphate of copper, a fine chestnut horse, at the time under sentence to be destroyed on account of glanders,

was made the subject of experiment, with a view of settling the question. For the first five days half an ounce of the copper was exhibited daily, at the expiration of which time the animal beginning to loathe his food, and there being some acceleration of the pulse, the dose was reduced to three drachms daily. In two days more the appetite had become so bad that the discontinuance of the medicine for a day became compulsory. On the day after—being the ninth from the commencement—the *fæces* proved to be “a little softened:” half an ounce of the copper given. Tenth and eleventh days, the dose was increased to an ounce; and on the twelfth, thirteenth, fourteenth, and fifteenth days, ounce-doses were administered three times each day, without again altering the natural state of the *fæces*.

The sulphate of copper is not to be classed among either cathartics or laxatives. In such large doses as an ounce, it speedily creates nausea and loathing of food; and febrile disorder followed in many, perhaps most, instances by griping pains and diarrhœa: and these disturbances, should the medicine be continued, end in death. Half-ounce doses, persevered in for any length of time, will often produce the same effects. But in one or two-drachm doses, and especially in the form of solution—a formula much lauded by Professor Sewell—the sulphate of copper may be exhibited with safety, and in some disorders with advantage. To deny that its administration has been attended with benefit in glanders and in farcy, would be to run in the face of the experience of ages, and of all our professional forefathers’ observation and assertion. We have neither right nor reason for saying that blue vitriol formed an useless or ineffectual constituent of their “farcy balls.” My father’s farcy ball—and my father, in those days, was assisted in his practice by Professor Coleman—was composed of cupri sulphatis ʒij, antimon. potassio tartrat. ʒiij, terebinth. vulgaris q. s. ut fiat bol., and this ball was given when no experiment was making in every case of farcy that occurred, and was considered, in many of them, to cure the patients. That sulphate of copper possesses any specific powers over either farcy or glanders, I, for my own part, scruple not to deny; although I admit I am ready to believe that, of many cases of farcy, and of some even of glanders, it has, in its operation on the system, assisted in the cure. As a *tonic*, copper would give tone and vigour to the constitution; and might, where there was a natural tendency to counteract or throw off any morbidic poison, aid the constitutional powers in their salutiferous operations.

As an *astringent*, it would check or repress the secretions of mucous and ulcerous surfaces. The turpentine combined with it

—in the *farcy ball*—would add to its astringent effect upon the discharges, and produce a diuretic effect as well, and thereby further co-operate in the health-restoring processes. In some such ways as these we may account for sulphate of copper curing some cases of farcy and certain ones of glanders, and, perhaps, satisfactorily enough, without attributing to it properties which, in my opinion, it never possessed. And I quite agree with Professor Sewell in the preference of the *liquid* over the *solid formula*. It stands to reason that, in a state of weak solution, the mucous surfaces of the bowels must be subjected to less irritation or annoyance from it than when administered in substance; and I think it likely that the addition of mucilage to the draught may still further diminish this liability. Against this, however, we have to set the objections existing, and not without reason, to drenching. My own maxim in practice is, never to prescribe a draught where a ball can be made to answer the same purpose. In such cases as the present, where the medicine is of a caustic or escharotic nature, and where repetition and long persistence in the use of it become absolutely necessary, the liquid form should be chosen; great care being exercised in the administration of the drenches.

AS A TOPICAL REMEDY, the sulphate of copper is so generally and extensively employed, that, without their “blue wash,” veterinarians would hardly make their way in practice. It would be idle for me to pretend to point out in how many ways it is, and may be, made useful; I shall only in conclusion observe, that of the other preparations of copper introduced into veterinary medicine—the subacetate and the diniodide—the former is found exceedingly useful, as a topical agent, in thrush, canker, &c., and the latter has been presented to us by Mr. Morton as the most efficacious in which we can employ copper in farcical and glanderous affections.

ON THE LATE EPIDEMIC DISEASES OF CATTLE, SHEEP, AND SWINE.

Compiled by W. YUATT.

[Continued from page 344.]

IT is time for us to return to the epidemic of 1840-1, and to wend our way a little more speedily towards the south. We must, however, look in at Kirkaldy, whence we have an interesting account of this epidemic by Mr. ROBERT DODS.

He says, “I have delayed answering your letter until I might

be able to give you the full result of my observations with regard to the late epidemic. It made its first appearance in this district in the beginning of December 1840, and at first confined itself to a small district; the occupiers of these parts having purchased cattle at the annual Edinburgh fair, in the middle of November, for feeding purposes.

The first symptom I perceived of it was the hair slightly roughened and elevated. In eight or ten hours the hair was more erect. In twenty to thirty hours from its first appearance an eruption was observed in the mouths of some cattle, on the feet of others, and many were affected in the mouth, feet, and teats. The pulse varied much, and I believe that these symptoms depended on age, condition, and on the way in which the animals were kept, and the state of their bowels previous to the attack.

It will be observed that these cattle were stalled for feeding purposes, and had their bowels full of indigestible matters. I ordered sulphate of magnesia to be given, sufficient to produce a purgative effect, and the place to be well littered: the animals to be kept quiet, and not too hot, and to restrict the diet for a time. Some of these cattle were very ill and lame, but they soon recovered, and did well.

There were various paragraphs in the newspapers wherein was prescribed a routine of treatment for cattle having this disease; and these papers being read by some of our popular and influential agriculturists, who, on seeing these letters, consulted with their smiths upon the subject, the consequences that resulted were truly appalling. Some of these cattle were severely bled, and died soon afterwards.

The disease at length disappeared for two or three months, and then recommenced late in the spring of the year, when an unusual number of calves were brought to this place from Edinburgh. I cannot say where they were bred. They were principally sold to what is termed hill farmers, whose living chiefly depends on the breeding and grazing of them. Soon after they had reached these remote places, the disease broke out among the cattle that were at pasture, and continued for a long time.

The milch cows, when first affected with it, were confined to the house, fed with cut annual grass, kept dry and quiet, and not too hot. Those who could not eat a sufficient quantity of it to keep their bowels in a proper state, in consequence of their mouths being sore, had sulphate of magnesia, in boiled gruel, in sufficient quantity to open the bowels. The young stock that were in the fields, when severely attacked, were put into dry straw-yards, and treated in the same manner. I believe that eighteen out of twenty recovered without being housed.

In some severe cases the disease appeared to be of a mixed character, at times requiring bleeding and physic. I have had occasion to use both, but only a few out of several hundreds actually needed it.

By allowing the eruption to make its appearance, and by keeping them cool, quiet and dry, they appeared to recover soonest from it. I was sent for to attend on two cows which apparently had recovered from the disease, and were sound on their feet, but on being turned out on too wet pasture had become very lame. I examined their feet, which were intensely red, particularly at the heels. I had them confined to the house, gave them for food cut grass, and applied a tepid cataplasm containing acetate of lead in the proportion of half an ounce to each foot, and to be kept dry and quiet. These animals required no farther treatment.

I allude to these cases, in consequence of having seen smiths, and others who have followed their example, apply powerful stimulants and strong solutions of caustic, producing severe pain, extensive inflammation and swelling, and frequently symptoms of sloughing of the hoofs.

The soil here is of various qualities, and the disease has been raging in all kinds of weather. No particular state of the atmosphere seems to influence the disease, either mitigating or aggravating it. It is a contagious disease, but not of an epidemic character. When a disease is said to be epidemic, I mean one that is produced by a certain state or condition of the atmosphere. That state has, I believe, baffled a great many who have entered upon its investigation. The disease has been called murrain, or plague, but it has no resemblance to that disease. In plague, actual contact is necessary, either with the affected individual or with his apparel. There are many diseases that are propagated by contagion, such as mange, &c., and unattended with febrile symptoms. This disease among cattle is of a varolous nature, and resembles small-pox more than any other eruptive disease.

In consequence of cattle having a dense texture of their skin, preventing the eruption from making its appearance, extensive disease is produced upon more tender parts, as the mouth, teats, and feet. Cows having the disease, and being far advanced in their pregnancy towards the crisis of it, it frequently follows that, after the calf is born, it contracts the disease, and dies. This is often attributed to the poisonous quality of the milk, instead of the disease being otherwise received from its female parent. I have taken the matter from the teat of a diseased cow, and inserted it into the skin of my hand and arm, and in both cases have produced distinct pustules on them. I have also

drank of their milk, and have fed dogs, puppies, cats, kittens, and pigs with it, without their experiencing any bad effects from it; but there is always danger after the disease has been upon the cows for thirty hours.

I was called some days ago to see some stots of pure blood that were affected with acute diarrhœa on being turned out to damp pasture, but of good quality. They were three years old, and in good condition when turned out: but they now had a very dejected appearance, and were sinking rapidly, two having died before I saw them. Their fæces were frequently discharged, and very liquid, with scarcely any mucus. There was little or no appetite, and they were continually lying down. There was no symptom of spasm. I had them housed, and tried with hay and boiled barley. I administered to each, pulv. alumin. \mathfrak{z} iv dissolved in two pounds of boiled gruel, pulv. gentian. \mathfrak{z} iii, zingiber. \mathfrak{z} ii, mixed and given three times a-day.

On the afternoon of the next day each had taken five of the doses, and the purging had ceased. I discontinued the alum, and gave to each three drachms of gentian, and one of ginger, in a pint of gruel, repeated twice in the day, and continued for some time, when they fed well, and in fourteen days after they were turned out again, and did well, but to dry pasture."

We now travel to the EAST RIDING of Yorkshire, and Shipwell Hall, the residence of J. PARKER TULSON, Esq. The situation of his farm is damp and wooded; the surface-soil, generally speaking, a black sand, and the substratum a red sand, mixed with a little clay. An epidemic made its appearance about the middle of August 1840 among the lambs. They had no communication with any other animals, except that they crossed the public road from one side to another, and not herding in any place where diseased animals were or might have been, so as to communicate any disorder. They were out of doors, and in tolerably fair condition—fed on grass, and little more than five months old. No full-grown cattle had access to them. The disorder first appeared in their losing their condition—wandering about the fields—frequently going to the water to drink—and exhibiting a considerable degree of weakness. The disease was most prevalent in the mouth, or it may be more properly said that the malady was almost confined to the mouth, and the lambs, for a long time, continued to suffer from it.

They were chiefly kept out of doors, and fed on grass. At three different times a table-spoonful of common turpentine and the same quantity of common salt was administered, in about half a pint of water. There were 119 lambs. Three died at the

commencement of the disease, and three afterwards. The appearances after death were extreme lowness of condition, and bloodless appearance of the heart and liver, and other viscera. Forty out of the 113 that were left looked remarkably well; forty-seven were sold, and the remaining twenty-six were very fair to look at. On the whole, Mr. Tulson had no cause to complain. Possibly the turpentine might have been partly or altogether avoided, a more efficacious dressing for the mouth might have been selected, and the common salt might have yielded to the sulphate of magnesia. We have no right, however, to find fault.

MR. SMITH, of Bridlington, in the neighbourhood of Flamborough-head, lives on a somewhat flat, and dry, and open country, but with some small plantations. The soil various—the upper stratum calcareous—the substrata chalk and gravel, and limestone and clay. No marshes.

His flock was one of the first affected. On the 27th November, 1840, the disease suddenly broke out, including wether shearlands and draught ewes, gimmer shearlings and rams. In the space of ten days it extended to the wether and tup hogs, and, in all, 280 were infected.

Two hundred ewes, eighty gimmer hogs, and forty lambs that had been let out for the season, did not shew any symptom of having taken the disease, although the ewes and gimmers followed the feeding sheep, and the forty rams were likewise in the same field. The disease was also partially spreading to the cows. The disease had not infected or appeared in any flock within two miles of the place.

The animals were out of doors when they were first taken. They had been fattening on seeds in the summer, and white turnips in the autumn. The wethers and gimmers were about nineteen months old—the ewes from two to five years—the rams from two to six years old—and the tups and wether hogs eight months old. [We make no apology for this detailed account. It is a truly scientific man whose proceedings we are describing, and who gives a plain and intelligible answer to every question.]

The *milch* cows were the only cattle affected. The disease first appeared by their lips and mouths being blistered, the tongue swollen, and a copious discharge of saliva. The above symptoms were always the first indications of their being affected. They were diseased in both the mouth and feet, but in their feet first. It was most general among the sheep, and in the cows the mouth only was affected.

There are many cases of sheep having been affected a second,

and even a third time, with augmented severity. This was observed in the present instance in fifty among the fat sheep, and twenty among the hogs, and in both with considerable severity.

The animals were fed with cut turnips and a portion of hay. One ounce and a half of common salt was given to each aged sheep, and an ounce to each hog. Some of them had a second dose. The salt was dried and pounded somewhat small, and given to each sheep in that state. The cows had, each of them, an opening drink, consisting of Epsom salts and sulphur. *None of them died.*

The milk diminished, but the udders were not affected. The milk soon afterwards returned in full stream. The cows were attacked a few days after calving, but those in calf escaped, although housed together. The ewes in lamb shewed no disposition to abort. Abortion, in some flocks, prevailed to a great extent; but all his animals were perfectly free from it. Both the cows and sheep, more or less, lost their condition, but in sheep those shrunk the most where the attack was most severe. They ate but little for the first two or three days, owing, no doubt, to the excessive inflammation in their feet. After this subsided the appetite returned. In no instance was the mouth affected a second time.

On February the 16th Mr. Smith parted with all the fat sheep, and with them apparently the disease. The wether hogs shewed no symptoms of the epidemic for three weeks previous to their being sold.

Mr. SHAWE, of Brantingham Hall, in the East Riding, early in November 1840, purchased six in-calf galloway heifers from a jobber near Thirsk; and as the epidemic was raging at the time, these animals were placed in a wheat-stubble field by themselves, and at a distance from any other cattle or sheep. One of the heifers arrived with the disease upon her;—the others all took it in three days, being attacked severely both in their mouths and feet. Two of them calved dead calves, both of which were affected by the disease.

As these heifers were much confined in their bowels, three doses of aperient medicine, consisting of Epsom salts and sulphur, were given to each, and also plenty of turnips; but they were exposed to all the cold wet weather of November on a bare stubble, without shed or even a tree to shelter them, as Mr. Shawe did not dare to move them for fear of infecting his other cattle or sheep. They all recovered by the beginning of December, and the disease did not spread among his other cattle, al-

though it was very prevalent all around. In the third week in November, however, three ewes appeared to be infected by the epidemic. On the 25th of January, 1841, it attacked a yearling calf, and then going through the cow-house, where more than forty head of cattle became affected by it, as did likewise all the pigs, who had it slightly in their feet. His land was fairly sheltered on the north and east. The wold portion of the soil was a warm friable loam incumbent on porous chalk-rock. To this succeeded a stiff brick clay, then a clayey loam, a clay subsoil, and sandy loam; and, after that, good alluvial soil to the banks of the Humber. When the attack on the cattle commenced, the ground was covered with snow, and the wind blew south-east. This account of the soil and the weather will occasionally be interesting. The animals just referred to had not been in communication with any others. They had not been driven along any public road, nor herded with diseased animals, nor, to the best of Mr. Shawe's knowledge, had any person been near them who could have communicated the disease. They were in a grass field in good condition, and three or four years old.

"The young calves were first attacked. The disorder usually appeared in the mouth, and then in the feet; in some cases in the feet only. The sheep and beasts were affected in both the mouth and feet: the pigs in the feet only.

The infected sheep were separated at once from the flock, and put into a dry grass field where they were fed on turnips. No physic was given, and they recovered within three weeks.

The cows and calves were fed on turnips and oil-cake. As long as the bowels were open no medicine was given; but, if otherwise, half a pound of kitchen salt in powder, and an ounce of ginger, were given to a cow, and a smaller quantity to the lower animals. When the disease abated, gentian, ginger, and caraway were given as restoratives. The feet were generally left to nature, except in one case, in which turpentine was used with good effect.

Out of three ewes affected none died, nor any out of twenty-eight pigs; but one cow and one calf out of forty did die. In the cow, the lungs were highly inflamed. The calf was quite putrid.

The milk was never diminished when the udder was not affected; and, when it was affected, it generally soon returned in its former quantity. Out of four cows far advanced in pregnancy two produced dead calves, and two picked their calves.

After this disease subsided, all the cows were attacked with cutaneous diseases of greater or less violence, and the condition of all of them was bad."

Mr. Shawe now makes some general observations on the epi-

demic :—" So far as my experience goes," he says, " the epidemic affects milch cows far more than any other stock. Mine were more diseased in their udders and feet than in their mouths ; but I found that when they were attacked severely in the mouth, they did not suffer so much in the udder and feet, and became convalescent in a shorter period.

My pigs were only slightly affected in the feet, and recovered without any physic ; indeed, unless there was costiveness or fever I used no medicines except alteratives and stimulants, merely keeping the animals dry and tolerably warm, and giving them an ample supply of vegetable matter and oil-cake.

I can give the Society no satisfactory information as to whether it is infectious as well as contagious. In my own case, the yard in which the cattle were affected lies away from all public roads, and great pains had been taken to prevent all risk of contagion ; yet, in five other yards, full of cattle of all ages, not one case of the epidemic has occurred ; and in one of these yards are six working oxen, that are constantly going along the public roads, and have done so for many months. The pigs, also, in these yards, have hitherto escaped. All my cattle get more or less oil-cake.

With respect to sheep, three ewes only out of 300 have, as yet, been attacked, and that in November last. The moment the fact was ascertained, they were separated from the flock, and it spread no farther. Out of nearly 400 wether or gimmer hogs, no case has occurred.

I beg to add that, with the exception of the infected yard above alluded to, my stock never were more healthy, nor have they thriven better than they have done this winter, which I attribute to the extra food and care bestowed on them from fear of the epidemic. All of them, including the horses, had access to rock salt."

WEST RIDING.

The tenants and neighbours of JOSEPH DENT, Esq., of Ribston Hall, had their cattle and some sheep affected six months before his, on account of his having as little as possible intercourse with them. The first appearance in his farm and among his fat cattle was in the latter end of November. It extended to the milch cows, all of which were housed. It then attacked the young stock in the farm yard, and lastly was observed in the heifers and cattle in the adjoining fields. The cattle that were housed were fed with turnips, hay, and linseed cake. The fat cattle and the milch cows were first attacked by soreness in the feet, and refusing their food ; those out of doors were then affected

in their mouths. Hay and turnips, with linseed cake, were given to those that were housed, and medical treatment adopted on the first appearance of the disease, consisting of lbj of salts, ℥ij of treacle, and three ounces of sulphur, to full grown beasts, and smaller doses to younger cattle. The fat cattle suffered very little, but the milch cows more; and on account of the weather being exceedingly severe, and there not being an opportunity for shelter, the out-door cattle suffered most of all. The cows lost the greater part of their milk for awhile, but it returned with returning health. The udders and teats were sore. None of my young calves living upon the milk of the infected cows took the disorder. I adopted the plan of serving from the pail, and not allowing the calves to suck. Some had a scurfy eruption on different parts of their body and round the eyes; but this is sometimes seen in young cattle. Those that were housed got over the disease best, but others exposed to the weather were generally left in a very low condition. When the epidemic first appeared, the greater part of my family discontinued the use of milk, cream, &c., but afterwards they took it as usual, and did not experience the least unpleasant or injurious consequence.

According to Mr. BARROWBY, of Baldersby, the disease began to appear among the hogs and cattle in the fold yard, and, in the first week in January 1841, it had spread to nearly all the sheep and cattle. It was distinguished by slaving in the cattle, lameness of the feet of pigs, and lameness and slaving in sheep. Nothing was done with them, except that they were pampered with every kind of food they could be induced to eat, and, in a few cases, gruel was administered. One of the cows calved twins while under treatment. She was very bad. Her milk ceased after the third day, and had not returned several months afterwards. The epidemic long remained among the pigs and sheep, and at length attacked the horses.

J. W. CHILDERS, Esq. M.P., of Cantley, states, that "the epidemic first appeared in his stock about the middle of October, attacking the pigs first, then the cattle, and lastly the sheep. The disease commenced about five days after some of them had been brought along the public road from the market. The pigs were about eleven months old, and in good condition, having been fed with steamed mangle-wurzel and barley meal. The full grown cattle appeared to be more subject to the disease than the youngsters were. In the pigs and the sheep the feet were most implicated, and the mouth in cattle. The sheep were sometimes affected a second time, but not the cattle or pigs. The disease then assumed a mitigated form, and was confined entirely to the

fect, and partly or principally caused by exchanging the old hoof or claw for a new one. The disease was treated by the administration of sulphur and salts. Not one animal died out of 450 sheep, 36 cattle, and 42 pigs. The quantity of milk was diminished, although the udder was not always much affected. In one bad case the udder was severely diseased, and the milk partly ceased. The animals were generally left in a weak state when the attack had been violent. The disease long remained among the sheep, and many of them continued lame, but on examination no external appearance to cause lameness could be discovered."

CHARLES CHARNOCK, Esq., Homefield House, Ferry Bridge, states, that the country in his neighbourhood is hilly and woody. The surface soil is a species of loam, containing a large admixture of sand and gravel, and the substratum a magnesian limestone.

The field in which the sheep were when attacked by the epidemic was dry, well sheltered from the wind in every quarter, and, in general, particularly healthy. The turnips that were then on it were of a good quality, and sound.

Mr. Charnock says, that "the weather and wind were very changeable about the time when the greater part of his stock was attacked, and his opinion is, that the weather is a great cause of, and has a considerable influence on, this disease. His neighbours all agree that they can perceive a great difference for the better in the symptoms when mild weather comes on."

Mr. Charnock says that, in order to explain his answers more fully, he begs to give some extracts from his Journal, the entries in which were made daily.

"The first symptoms of the epidemic that appeared in my stock were in a heifer about eighteen months old. I had six of nearly that age in a public pasture near the river-side, when a butcher turned a fat beast, which he had bought at Wakefield, into the pasture. It was badly affected both in the feet and mouth. It had been in the pasture two days before I heard of it. I immediately had my heifers brought home, and found that the smallest of them was ill in the disease. This was on the 20th of October, 1840. Its tongue was very much blistered, but it was not lame. We lanced its tongue, so as to bleed well, and gave it and the other five heifers the following drench in warm water—half pound of Epsom salts, a quarter of a pound of sulphur, two ounces of saltpetre, and one ounce of bruised ginger. I had them put into a fold half a mile distant from home, and separate from the rest of my stock, where they have been kept ever since. The same drench was given to them all on the third

day. None of them have been in the slightest way affected but the first, and that only seemed to be affected by its mouth being sore, which hindered it from eating freely for a few days. On the 10th of January, one of a lot of sixteen heifers in an open fold, that had had no communication with the above-mentioned nor any other diseased cattle or stock whatever, exhibited the disease in both its tongue and feet, and the number of stock mentioned in my answer to your queries were affected in the course of the week. We immediately gave to each the drench above mentioned, and repeated it on the third day, giving them a plentiful supply of linseed gruel, with a little wheat flour in it, and they all recovered in a few days that had it. There are some cattle in the yards which have not been affected at all; but we gave the drench to all of them, and where the feet were affected we touched the diseased parts of the hoof with butyr of antimony.

Up to the 1st of January my sheep had never the slightest appearance of the epidemic; they were, in fact, particularly healthy, and free from lameness. I lost four hoggets in December; at least had them to kill from being affected by giddiness, but I had congratulated myself with having escaped hitherto so well. The weather in the latter end of Dec. 1840 was very changeable.

January 1, 1841, I had 350 hoggets and 100 shearlings eating cut hybrid and Swede turnips in the field I before mentioned, and 300 breeding ewes feeding on the scraps after them. On the evening of the 1st of January we removed the ewes to some white turnips in a field about a mile off: they were then very well, and had no symptoms of lameness.

In the afternoon of January 2d, my shepherd found a few of the hoggets and shearlings lame. I examined them next morning, and found decided symptoms of the disease having attacked them, and in the course of January 4th I found several of my ewes likewise affected. I gave each of the shearlings three ounces of salts, and each of the hoggets two and a quarter ounces. I also bled them in the toe-veins, and touched the diseased parts of the foot with butyr of antimony. I always repeated the salts on the second day, and dressed the feet every day where required. The disease seemed to linger about a few of them for some days, but has disappeared, except only a little tenderness of the feet when the ground is hard.

I removed my ewes on the 7th of January, 1841, into a fold bedded with straw, having sheds on three sides of it, giving them turnips and hay, and dressing their feet with butyr of antimony, but giving them no medicine, on account of their being heavy with lamb. In the course of a fortnight they were all recovered, and put back into the field. The shelter appeared to

be highly advantageous to them, and, as I before remarked, a little tenderness of the feet on hard ground is all I can perceive of the effects of the disease.

Pigs I have found very difficult to get medicine into. The best purgative is a few grains of calomel in their food, according to the size of the animal."

We will conclude our account of the West Riding of Yorkshire with the account which Mr. Hall, the steward of Earl Spencer, gives of this epidemic among cattle and other stock. It is an exceedingly valuable document. It properly belongs to the county of Nottingham; but it forms an excellent winding-up to the history of the epidemic in the West Riding of Yorkshire, on the very borders of which it is situated.

Mr. Hall states, that "the country in the neighbourhood of Wiseton is generally flat; but the whole farm is bounded on the north by a range of inconsiderable hills. The Wiseton farm is well sheltered, with numerous minute springs, and thickly wooded. It has an extremely varied surface soil, with a generally retentive subsoil, no river of any importance, but a small one forming the western boundary of the farm.

When the epidemic first appeared the weather was rainy and very damp. There had been no communication of any kind with cattle that might have been diseased at the time, nor had any animals lately travelled or been herded in the neighbourhood. The cattle that were first attacked by the epidemic were at pasture: their condition was good, and they were grazing on after-math, and were from one to two years old. The disease was at first confined to these yearling cattle.

The *only* decided symptom of disease among them was a very greatly increased secretion of saliva from the mouth, and blisters appearing on the tongue and palate on the succeeding day. There was no reason to suppose that there was any infection in the business.

The disease appeared or rather commenced in the mouth—the lameness was more the result of disease, for the mouth was, generally speaking, nearly well before the feet were much affected.

The medical treatment of these animals was very trifling. As soon as the increased flow of saliva was observed in any of the cattle they were immediately, though quietly, driven to a dry yard, with sheds and stabling, at one extremity of the farm. Great care was observed in bringing them to this place to avoid any contact with the healthy portion of the herd, and equal caution was used in preventing those that were in attendance on

the diseased animals from having any employment that would bring them among the other cattle of the farm.

The yard was littered with dry straw, and kept clean. To some of the first that were attacked a pound of Epsom salts was given, which I am now satisfied was improper, since the undue purgation produced such excessive excitement, that all the first cases were the longest in recovering. In the later cases the purgative was reduced to half its quantity, repeating it if occasion required, the object being gently to relax the bowels*.

The tongue and palate were well washed, twice a-day, with the solution of sulphate of copper, as recommended in the Society's paper. This, with a slight tonic, when recovery appeared tardy, was the only treatment observed†.

They were fed, during the early stages of the disease, on soft cold mash, made with equal portions of bran and linseed cake, ground very fine. As soon as they were able to eat them, white turnips were added. The cattle were always sheltered in rainy weather during the continuance of the disease. It may be observed, that the most certain sign of convalescence was the gradual cessation of the undue flow of saliva.

In about a fortnight after the commencement of the disease they were turned out of the yard into a dry paddock that had been closely grazed, turnips being carried to them; and in about a month from the same period they were again driven to the pasture."

Earl Spencer and Mr. Hall's attention being devoted chiefly to the breeding of stock, nothing is said of the treatment of milch cows; but some valuable observations are made on the treatment of sheep under this disease. Mr. Hall states, that "a field of turnips was purchased from a farmer situate at a distance of five miles from Wiseton, and about 200 of the fattening tups and shearlings were sent there, to be fed on the turnips. This was towards the latter end of October.

They finished the turnips in two months, and were then brought to the same feeding on our own farm, but separate from the remaining portion of the flock.

* I perfectly agree with Mr. Hall, that in this peculiar disease, in which all the vascular membranes are so peculiarly excitable, a pound of sulphate of magnesia is somewhat too much to be administered at a dose. Some aperient medicine, however, is absolutely necessary for many cattle were lost for want of it, but, perhaps, half-pound doses of the Epsom salts, guarded with a little ginger, were the safest and the most effectual.—Y.

† Considerable tact, however, was frequently, or in almost every case, required to indicate the time when the tonic should be resorted to—the nature and quantity, and the alteration, and increase, or diminution, or suspension of the tonic or the aperient. Here it was that the non-medical man so often failed, and the veterinary surgeon was so requisite.—Y.

Within a week from their removal the greater part became lame, with blistered tongues and palate, and some external sores on the lips and nostrils. I had them removed from the turnips to a pasture field adjoining. A very mild purgative—Epsom salts, in the proportion of one to three ounces, as their age and condition required—was given to each, and the mouth and nose washed daily with a solution of sulphate of copper. The whole were attacked, varying, of course, in severity.

Turnips were cut for them in troughs—the manner in which they had been previously fed—of which, after a few days, they again ate freely. The mouth soon became healthy, but the lameness continued some weeks.

In the latter part of February they were nearly well, but had suffered materially in condition. I have since discovered, that in the field adjoining to that in which these sheep were placed from November until January, were sheep suffering from the disease; and it should also be observed, that the remaining portion of the flock—250—that remained altogether on our own farm, have entirely escaped.

COMPTE RENDU OF THE LABOURS OF THE ROYAL VETERINARY SCHOOL OF ALFORT.

CLINICAL CHAIR.

Professors RENAULT and BOULEY, *M. PRUDHOMME,*
Assistant.

DURING the scholastic year that has just passed, 1193 sick animals were admitted into the hospitals of the school: of these, 930 were of the equine race, 35 were ruminants, and 228 dogs. Nearly four thousand horses were also brought for examination as to soundness.

The pupils of the fourth year have, likewise, as in preceding years, practised on a great number of horses belonging to persons in the environs. The number of these greatly increased during the last session.

The care of the professors and assistant, whether in the hospitals, in the school, or extending to medical advice abroad, has comprehended more than six thousand animals: a number nearly double those that have been treated in any preceding year. The two last years being added together, 9544 came under treatment.

It is to be regretted that the number of ruminants was so small; but it should be observed, that the effects of the measure recently adopted by M. the Minister of Agriculture, namely, that of admitting gratuitously animals of the bovine and ovine species into the hospitals, has not yet become sufficiently known. We should also add, that it can only be in process of time that this measure can be completely efficacious.

We will now state the most interesting results at which we have arrived, either by clinical observation or direct experiment.

ACUTE GLANDERS.

The consideration of glanders has always occupied a large space in the columns of our *compte rendu*. In fact, this dreadful disease commits such extensive ravages, and with such obstinate continuance on the horses in the neighbourhood, that every day new cases present themselves for our study and observation: and, although the subject seems occasionally to be almost exhausted—although all that is possible appears to have been said on matters that have so long engaged our attention, it, nevertheless, has not appeared to us unimportant briefly to state the result of our observation respecting this disease during the course of the present year.

The number of glandered animals that have been presented this year for examination in our school has been so considerable, that we affirm that glanders has prevailed, and prevails still in an enzootic state, in the whole of the environs of Paris. It is principally among the horses employed in the construction of the fortifications that it has raged with the greatest violence. The form under which it has oftenest appeared is that of *acute glanders*. Without denying that contagion has contributed to the development of this affection to so vast an extent among the animals employed in these works, nevertheless we think the principal cause of the extension of the pest, so considerable, was the exhausting and excessive labour to which these animals are compelled to submit. This fact will astonish no one when he learns that, in a great number of cases, the horses are employed eighteen hours out of the twenty-four in drawing the materials over the roughest roads. What renders this mode of viewing the subject more likely to be true is, that the horses which the disease usually attacks are those who expend most muscular strength and power; namely, those which, as the owners themselves affirmed, were the best and the most willing in harness. We quote this fact at the present moment on account of the multiplicity of the works that have been carried on around us, and which have shewn, in a more striking manner than usual,

the progress of the disease, and given it an important place in the general history of the malady.

With regard to the *contagion of acute glanders*, we must state a circumstance which clinical observation and experiment have rendered most striking. Acute glanders has not appeared to possess contagious properties so extensive as in 1840. When in that year we gave an account of the experiments that we had made on this disease, we affirmed, after many trials, that it was easily transmitted from horse to horse by cohabitation. In this year experiment has not given these results so frequently nor so certainly ; and we have seen numerous sets of horses affected with acute glanders live and work during a very long period with sound horses, and without the latter being affected.

This fact is connected with the general history of contagious diseases, which do not always possess in the same degree the property of transmitting the malady.

What still more serves to support our observation is, that, fortunately, we have not seen in the interior of the establishment any of those dreadful cases of the transmission of glanders to the human being, which during two years caused such alarm among us. In the hospitals at Paris, according to the accounts of the medical journals, the cases of glanders among men have been less frequent than in any preceding years, although the attention of the surgeon has been more than usually directed to this subject.

There is another circumstance that has struck us this year, and which is connected with the subject of which we have been just speaking. Acute glanders has evidently exercised on the economy of the animals that it has attacked a less rapidly destructive influence than it has been accustomed to do in preceding years. During two years, the animals infected immediately sunk under the attack of the disease, or died between the ninth and twentieth day. This year we have seen a great number of horses on which the acute glanderous eruption was only attended by a slight febrile influence for several days, and which, by rapidly disappearing, permitted the return of the integrity of the digestive functions, and all the other apparent signs of health, without, however, the essential symptoms of glanders disappearing.

This explains the circumstance, that, notwithstanding the attack of so dreadful a disease, animals labouring under it could be used at the different works in timber-yards and fortifications, and where the sanitary police laws were rarely or never observed.

Another fact corroborates the account that we have just given of the mild character of acute glanders in the course of this year.

We have witnessed in our hospitals the *spontaneous* cure of five horses affected with acute glanders perfectly developed. A disease which exercises so great an influence on the public health deserves our attention and study. With the intention of elucidating its history, we have continued a series of experiments commenced two years ago. We have endeavoured to ascertain, by a succession of inoculations, whether acute glanders loses its contagious property by reproduction; and we have seen that at the seventh generation the virus was as active in its effects as when it proceeded from spontaneously developed disease.

We have also tried whether the matter of the nasal discharge and dried in the open air, preserves its virulent property for any considerable length of time; and we have seen the eschars proceeding from this desiccation macerated, and distilled in water, and yet the part being inoculated, at the end of six weeks acute farcy has appeared.

We have tried whether the virulent matter existed elsewhere, as well as in the products of the nasal secretion, and we have seen matter from ulcers of the lungs very rapidly producing acute glanders.

Blood possesses the same virulent properties. Injected immediately after its extraction from a vein into another vein of a sound horse, it produced, at the end of four or five days, glanderous eruption.

With the purpose of assuring ourselves once more whether glanders could be transmitted to other animals beside the horse, we attempted its inoculation on four cows, three sheep, six dogs, and six rabbits, trying the effect of the virus on as many horses at the same time. All the inoculations with matter of glanders on the horse produced, without exception, their accustomed effect but our attempts were completely fruitless on the others. It has been the same with the experiments of cohabitation continued for more than six months between horses attacked with acute glanders and animals of different kinds.

CHRONIC GLANDERS.

In this year, as in all the preceding ones, we are compelled to confess the complete impotency of the efforts that we have made to cure chronic glanders. This statement will astonish no one who is aware of the irreparable lesions which the attack of this disease leaves in the general organization. When they have assisted at the opening of horses really attacked with *chronic glanders*—when they have seen the profound destruction of the membrane which lines the interior of the nostrils—the collections of purulent matter in cavities almost closed—the complete transformation of the pellicular membrane which once

clothed the walls of these cavities ;—when they examine the lungs of a glandered horse, and have sometimes seen the perforation of the tubercles deeply modified in their substance, and at the point of being converted, in large masses, into a white compact body impermeable to the air ;—when they have seen in the lymphatic apparatus those sudden and complete alterations of the lymph and the organs which prepare and support it ; they will not be astonished that a disease, of which the influence is so general on the whole economy, and which destroys parts so essential to the integrity of the organic movements, should be altogether beyond the efforts of art.

Have we not seen, in fact, in the course of this year, the public credulity sadly abused by some new attempts to cure glanders, undertaken by men who, under some high patronage, have dared publicly to announce certain results of measures which they knew to be inefficacious ? Such speculations ought to be despised. The public should be taught that in no system of therapeutics will the means of curing glanders be found, or they will only arrest the ravages of this malady when the laws of health are better studied and understood, and our ameliorated races of horses are better adapted to the services that are required of them, and it will be known how properly to proportion the services of a horse to the strength of his constitution.

SARCOCELE.

Among the first signs of chronic glanders there is one that has often presented itself to us in the course of this year, and which we have been able to observe in all its varying difference of appearance, and also study the varied alterations which are attached to it. We refer to the engorgement of the testicle, vulgarly known by the name of *effort*, and improperly described under that of *sarcocele*.

The engorgement of the testicles, which often precedes glanders by several months, is always accompanied, at the time of its appearance, by a very marked febrile state. The horse becomes dull, refuses his food, and principally his oats ; the coat is rough and hard ; the vertebral column is bent ; the walk becomes constrained ; and it is especially difficult in the hind limbs, which progress with a kind of forced abduction. The pulse is strong and quick, the respiration hurried and nervous, the mucous membrane injected, and often covered with numerous petechial spots. Twelve or twenty-four hours at most after the appearance of these symptoms, the region of the testicle becomes the seat of a considerable engorgement. It is hot, and painful when pressed upon, œdematous in its whole extent, and prolonged especially by a hot and painful œdema in the region of the belly

and the flanks. Sometimes, after these first phenomena, the œdema is not long in disappearing, and with it the acute inflammatory character of which it was only the symptom. At the same time also the fever moderates, the appetite returns in a slight degree, and the animal becomes more easy. These first symptoms having passed, we recognise, by exploring the region of the scrotum, the existence of a hard tumour, resistant in its whole extent, very painful when pressed upon, often corrugated on the surface, especially on the side of the groins, and following the course of the epididymis.

Arrived at this state, the tumour of the scrotum takes a different course, following the nature and the seat of the essential alteration which constitutes it. Sometimes it remains stationary, preserving for weeks and months the character of deep and profound inflammation, always hard, its surface resistant, and an acute pain manifested on the slightest pressure. The general state of the animal is also changed—he becomes considerably thinner, is sadly dull, the head hangs down, the back is bowed, and he eats very little.

In other cases, the engorgement of the scrotum has disappeared in almost its whole extent, and nothing remains in its centre but a hard lengthened substance following the passage of the epididymis, curled in its whole extent, and painful when touched. Notwithstanding the disappearance of the principal engorgement, the scrotal region usually has little of its normal suppleness, and we feel, by exploring the testicles, that they do not possess their usual mobility in the sheath which encloses them. This state is compatible with a certain apparent integrity of the essential functions; and the animal frequently becomes lively again, eats well, is able to work, and sometimes even grows fat.

At other times, the testicular engorgement gradually increases in size, and constitutes a tumour of a spherical form, very hard in its whole extent—often unequal at its surface—a little painful on pressure—growing rapidly, and sometimes acquiring the size of a man's head. In this last case the general state of the animal shews that he is becoming the prey of a profound disease which undermines his constitution.

Such are the forms under which these testicular engorgements shew themselves, and which may be considered as the first infallible signs of chronic glanders.

Let us now see what are the alterations of which these engorgements are only the symptoms.

The tumour in its most simple state, namely, after the disappearance of the inflammatory phenomena which accompany its appearance, is reduced to a central nucleus. In dissecting the

parts, it is observed that the cellular body adjacent to the dartos is the seat of a slight yellowish serous infiltration. The serous vaginal membrane is injected, reddish, and has contracted adherences in several parts of its extent. The epididymis is considerably tumefied. The cellular substance which contains the circumvolutions of the canals is reddish, and covered with a pseudo-membranous pellicle. In cutting the substance of the organ, a considerable quantity of a very thick purulent liquid escapes on pressure of the orifices of the canals. These canals, very much dilated, constitute isolated collections. At the point of the prepuce the testicular cord is infiltrated, and sometimes purulent.

The substance of the testicle is somewhat discoloured, and seems to have experienced a commencement of atrophy.

In cases where the scrotal tumour outwardly presents the first characters that we have assigned to it, if we dissect it we observe, 1st, A serous state of infiltration of the cellular subdartesian tissue, with injection of this tissue. 2d, The character of an acute inflammation of the vaginal sheath, with formation of false membranes, and the presence of purulent collections multiplied in the vessels that are constituted by these false membranes. 3d, The purulent state of the epididymis, which we have already described; and, 4th, and finally, A considerable and prolonged engorgement at the top of the testicular cord, with purulent collections in the cellular tissue entering into its composition. The testicular substance is sometimes sound; but at other times it encloses little yellowish disseminated points. Usually it is discoloured.

Finally, in its third form, the sarcomatous engorgement is essentially constituted by an alteration of the testicle itself. The substance of the organ has submitted in its totality, or in several of its parts, to a transformation which renders it like liver boiled and softened. When the cortical envelope is cut, a very thick pus escapes, which has a sickly and faint smell. This alteration is usually connected with a purulent state of infiltration of the vaginal sheath; also with purulent secretion in the canals of the epididymis, and considerable engorgement of the testicular cord, which is often as large as a man's arm.

The disease, of which we have just described the symptoms and studied the alterations, recognises, like glanders, as its predisposing cause, the excess of labour to which the animals have been compelled to submit. It is, in fact, almost exclusively the lot of post or diligence horses, or those that are employed in heavy carts of stones or in cabriolets, and which, to the present day, continue to be so badly constructed.

Why is this place chosen for purulent collections in the epi-

dymis, the testicle, or other parts annexed to this organ? Is the animal's labour—drawing with violent efforts—a sufficient reason for the appearance of the disease in the inguinal region rather than elsewhere? This is one of the numerous secrets in medical science which we are not able to unravel.

Treatment.—The treatment of the testicular engorgements should be antiphlogistic at its first appearance, as emollient applications and local anodynes; scarifications to the depth of the symptomatic œdema; suspensory bandages; warm cloths round the region of the kidneys; warm bathings; general bleeding, particularly if, as it sometimes happens, the fever of reaction is very intense.

With the help of these means we succeed, in some rare cases it is true, and obtain a complete resolution of the engorgement. Usually, however, little is gained by this treatment but the disappearance of the exterior symptoms; or, the symptoms of the acute inflammation being affected, the tumour remains with the characters that we have assigned to it.

In this case, the only means of treatment to which we can have recourse is the complete extirpation of the tumour—the seat of the purulent collections, and the organic transformation.

Here, however, a question presents itself. The sarcomatous engorgement of the testicles being only, as clinical experiments have perfectly demonstrated, a precursor sign—the first symptom of a general disease—is it proper to have recourse to a very serious and non-compromising operation in order to make only one symptom disappear?

The question thus put, let us first take into consideration the results of the experiment itself, in order better to resolve it. If it were well demonstrated that the operation of the extirpation of the sarcocoele, in the majority of cases, leads to a radical cure of the evil, or only to an amelioration in the general state of the patient, the question being judged by these facts, there will not be any more matter for discussion. But, unfortunately, the assistance furnished by clinical experience leaves this question in the most vague and absolute indecision. Sometimes, in fact, we see the operation of the sarcocoele attended by the most perfect success, and the animals return to their natural state of health delivered from a painful tumour which kept them in a continued state of fever. At other times, although the operation has been well performed, and the wound which was necessarily made approaches towards cicatrization, there may, nevertheless, remain several unpleasant circumstances;—the head is carried low—the back is bowed—the animal has no appetite—and, little by little, glands makes its approach, and the patient is lost.

Finally, in other cases, and not the least numerous, traumatic phenomena appear almost immediately after the operation. These are complicated with a purulent or gangrenous infection, and, after the interval of a few days, death succeeds.

Then, with these facts before us, the truth and accuracy of which cannot be doubted, we are unable to say absolutely whether an operation for sarcocoele should or should not be performed. Various cases may be imagined in which it may be perfectly indicated or may be useless, or should be absolutely avoided. We ought never to operate at the commencement of the disease. To undertake it at that time, when the inflammatory symptoms are carried to their highest extent, is to run the danger of considerable hæmorrhage during the operation, and especially after it, and of a gangrenous affection at no great distance of time.

When, after the disappearance of the inflammatory phenomena, the inguinal tumour is reduced in size, and the symptoms of health are returning, and the animal does not appear to suffer much, there will be no reason for adopting any severe measures. There will be time enough for this at the later period; but, when the acute inflammation has passed, yet the inguinal tumour remains hard, red, and painful, or the animal labours under a state of low fever, an operation may, perhaps, be indicated. The result of that operation is, indeed, uncertain, but there is no other remedy against the evil.

We will not describe here the manner of the operation, but will call the attention of practitioners to some consecutive phenomena, which may contribute to lighten several obscure points in the history of glanders.

The extirpation of sarcocoele is an operation exceedingly painful. In a great number of cases there will be considerable loss of flesh, and there will always be a violent re-active fever. It is not rare to see in the course of this re-active fever any acute eruption on the skin. Pustules will develop themselves on the nasal membrane; a discharge of yellow or citrine-coloured fluid will also appear, and, in short, acute glanders will be developed. This should be foreseen, and it will be prudent to isolate every patient before the operation is performed.

Under the influence of violent traumatic fever, glanders, which was previously latent in the economy of the animal, will, perhaps, break out all at once under its acute form.

This result being observed, we have endeavoured to discover whether, under the influence of the same cause—an intense traumatic fever—confirmed chronic glanders may not be susceptible of transformation, and pass into an acute state. The transformation of chronic glanders, latent or confirmed, into acute glan-

ders, may be, and perhaps often is, communicated by the fluids that are in circulation.

This change, however, is far from uniformly taking place. During the present year we have not had a single proof of the possibility of this contagion. We have taken five sound horses, and we have placed them in the same stable with five that were evidently glandered. Not one of the previously sound horses has taken the infection. Notwithstanding, however, the doubts which we have been compelled to avow of the contagious properties of this disease in a chronic state, we heartily approve of the measures of precaution that have been adopted. We always counsel the isolation and the sequestration of glandered horses. A malady which is so susceptible of change of form, and consequently of properties, ought in practice to be considered as contagious by every veterinary practitioner.

DISEASES OF THE CHEST.

The antiphlogistic and revulsive treatment is almost exclusively employed, and generally with success, in acute inflammation of the lungs and the pleura. Among the numerous cases that have been brought under our notice there were three that, on account of the peculiar character which they assumed, deserve especial mention.

In one case pneumonia, perfectly characterized in the remainder of its course both by the usual exterior signs and by those which auscultation furnishes, was complicated with certain violent *ataxic* (irregular or disordered) symptoms. The disease assumed a singular vertiginous character. The horse threw himself violently on the ground, and tore his flanks with his teeth. We thought that this was complicated with cerebral inflammation. Death exhibited lesions of acute pneumonia, which occupied half of each of the lungs.

In the second case, the horse was brought to the hospital with all the most violent exterior characters of acute pneumonia. There was interrupted and accelerated motion of the flanks—a plaintive sound in respiration—a reddish discharge from nostril—a yellowish red injection of the conjunctiva—the pulse full and hard. All these symptoms existed, and very attentive auscultation permitted us to perceive the respiratory murmur loud and sonorous through the whole extent of the thorax. The resonance was remarkable on whichever side we sounded him, and through the whole extent of the walls of the chest. This absence of the ordinary symptoms, so positive, which auscultation affords in acute inflammation of the lungs, weakened the diagnosis to which we might be conducted by the exterior appearances, especially

when he soon exhibited so much weakness in the hind quarters that it seemed as if palsy was commencing its attack.

The horse died, and we found, on opening him, that the middle and internal face of the right lung had been the seat of a very acute inflammation, already becoming gangrenous. In every other part the substance of both lungs was perfectly sound.

The third was a draught horse, very old, which was brought to the school eight days before, and then abandoned for his little worth. He presented every exterior appearance that would betoken acute pneumonia. In this case the auscultation was exceedingly obscure, and we hesitated considerably with regard to the diagnosis.

The pulmonary sound was strongly heard through the whole extent of the left lung, but in the right lung every thing appeared to be right.

On examining him after death, we found the left lung perfectly sound, and the right lung completely and perfectly hepatized. From its dorsal to its inferior border, and from the anterior lobe to the surface of the diaphragm there was one permeable vesicle.

This result, so little expected, would have made us doubt the exactness of our observation, if, on the morning of the death of the horse, struck by the discordance that existed between the indications that were furnished by the general state of the animal and the apparent soundness of the thoracic organs, we had not requested one of the students to assure himself, by an attentive auscultation, that there was no error on our part.

This singular fact, of the perception of the normal respiratory sound on one side of the chest, while the lung on that side was completely impermeable, explains itself, as it would seem, by its very impermeability. On the left, the sound lung, and through which alone the act of breathing took place, caused a supplemental sound to be heard, that terminated on the right side, across the lung become already a solid body, and rendered by that transformation a better conductor of sound.

CATARRHAL AFFECTIONS OF THE RESPIRATORY PASSAGES. (EMETIC.)

In our account of the scholastic year 1839-40, we announced the happy results we had obtained in the treatment of old catarrhal affections of the chest by the administration of emetic tartar, in variable doses, from four to sixteen grains or more.

We have continued from that time, and especially during the current year, to make many clinical experiments on the effects of this medicine, and, three years having passed, and almost every experiment being fortunate, we think we may affirm that

tartarized antimony is a noble medicine in the treatment of chronic discharges from the lungs, which are not of a specific character, or which are not connected with the existence of glanders. We will content ourselves at present with the simple statement of a fact of considerable importance in veterinary medicine.

INTESTINAL AFFECTIONS.

The acute inflammatory diseases of the intestinal canal are in general not very serious. Some of them, nevertheless, are complicated, during their course, with a comatose state, that sometimes long continues after the disappearance of the symptoms of the primitive disease. Two horses presented the characters of "immobility" at the close of acute inflammation of the intestines.

COLIC.

We have, during this session, proved the advantage of bleeding to a considerable extent when the intestinal pain seemed to be intense, and was proved to be so by the disordered movements of the animal. This practice, long adopted in our hospitals, is based on this incontestable fact, that, wherever the intestinal pain announces itself by any violent movements, there is one or the other of these causes, congestion in some isolated part, or extending through the intestinal canal. In this case, whatever may be the apparent fulness or emptiness of the intestine, bleeding is indicated, and will never be hurtful. The effects which it produces are sometimes almost marvellous. We have seen some horses a prey to absolute madness when suffering under an attack of colic, and we have been compelled to put them in the trevis to prevent them from seriously injuring themselves by their precipitate movements when under the operation of bleeding. These horses have become perfectly calmed after the loss of twenty or five-and-twenty pounds of blood.

INTESTINAL ULCERATIONS IN THE HORSE (TYPHOID FEVER?)

In the course of the month of July, a tall entire horse, fit for heavy draught, was brought to our hospital. This horse, which, in the language of its owner had but one fault, that of being too eager in harness, was employed for a considerable period in the hard work of dragging stones. It was only three months that he had recovered from a disease of the chest which had kept him on his litter during fifteen days.

On his entry into our hospital he was in a state of extraordinary prostration of strength. He could scarcely stand, and staggered as he walked—he was stiff in his loins—his coat was rough, and his

countenance had that singular expression of suffering which is exhibited under lesions of the nervous ganglionic system—his breathing was deep and interrupted, and his pulse small and weak—the conjunctiva had a faint red colour, and infiltrated with serosity; several petechial spots were also scattered on the pituitary membrane.

Auscultation of the thoracic parietes did not afford any particular symptom.

The diagnosis was uncertain, and it was impossible to pronounce the degree of the disease.

We prognosticated that he would die in a few days.

When put into his stall, he got as far as he could from the manger, and refused both food and drink.

During the night he lay for a considerable period without either groaning or beating himself and there was considerable discharge from the nose.

On the following day he died.

On post-mortem examination, no alteration was found in the thoracic organs.

The abdominal cavity presented some remarkable appearances. The exterior surface of the small intestine reflected a red tint in the greater part of its extent; and on incision into it, considerable chylous matter ran from it under the form of a thick blood-coloured *bouillie*.

On examining the internal membrane of this intestine, we found it pierced with ulcerations dispersed over it by thousands. They were of different sizes when examined by means of a microscope. The smallest were $\cdot 03937$ parts of an inch in diameter, and the largest about one-fourth of an inch. The minutest as well as the largest had a small distinct elevation around them, lightly projecting. The smaller ones and those of middle size presented in their centre a slight projection, which is nothing more than a small portion of the mucous membrane not yet ulcerated. They occupied only the superficial part of the mucous membrane, and appeared to be a simple erosion under the epidermis. The middle-sized filled almost entirely the thickness of the mucous membrane. Their base was smooth, and without any projecting granulations. The largest filled all the thickness of the mucous membrane, and their base corresponded with the submucous cellular texture. There was no abnormal vascular injection around these diseased cavities. Their border was not surrounded by any red areola, and the mucous membrane was not more thickened at this place.

It was impossible to state positively whether they had their seat in the interior of the mucous follicles. We could only see

two or three of these follicles sufficiently preserved in those in which the mucous follicles were not destroyed through more than half their thickness. As to their form, disposition, rounded and smooth edges, they represented, on a large scale, the disposition of the numerous mucous follicles which exist in the mucous membrane, and especially on the glands, called those of Peyer. All these ulcerations were grouped in numbers of three to four, seven to eight, and ten to twelve.

The mucous membrane of the large intestine, the cæcum, and the floating portion of the colon, presented ulcerations similar in their form and situation, but fewer in number.

ANASARCA.

Cases of anasarca have been frequent this year, on account of the great heat of the weather. Copious bleedings, employed at the commencement of the disease, had usually a decidedly good effect.

THROMBUS.

Cases of thrombus, complicated with inflammation of the jugular vein, have been, as usually, frequent in our hospitals. All, without exception, have been cured in a time, longer or shorter, according to the intensity of the inflammation of the vein that was the seat of them. In some cases where the vein, considerably ulcerated at the place of puncture, suffered the blood to escape in large quantities at the least motion of the lower jaw, we have often had much trouble in obtaining the formation and consolidation of a clot in the superior part of the vein, a condition without which an obliteration of the vessel cannot take place.

In order to arrive at this result we must have recourse to an application, round the neck, of an agglutinative bandage, composed of a mixture of pitch and turpentine. By the aid of this bandage we have been enabled to maintain, applied whole over the opening into the vein, some quills, rendered more resistant by the application of a layer of pitch on their exterior surface; and in combining this powerful hæmostatic measure with the application of a vesicatory along the course of the vein, and a perfect abstinence from solid food, we have been enabled to obtain the formation of a clot, and the development of the necessary inflammation for its organization.

The application of a ligature on the ulcerated vein, which, at first sight, appears to be the most certain method of arresting the hæmorrhage in the case of which we are speaking, ought to

be altogether rejected. The ligature of the vein ordinarily falls before the clot is sufficiently consolidated. The air, perhaps, comes in contact with it and softens it, and then the hæmorrhage appears more to be dreaded than ever.

At the closing of one ulceration of the jugular, and which had for a long time resisted all the means that we had employed, we observed a singular case of vertigo. This animal had been bled, and the wound would not heal. He was carefully placed between two stalls, so contrived as to prevent him from lying down, or rubbing himself against the stalls; and during a month he had been condemned to the most complete abstinence from solid food, the least movement of the jaws having brought about a renewal of the hæmorrhage.

This horse, on a certain morning, presented symptoms of vertigo. Sometimes he would throw himself forward on the ropes that restrained him, and then he would fall back with violence on the traces behind. The slightest noise alarmed him; a ray of light penetrating into his dark stable disturbed him. The pupils were much dilated, but the respiration was calm; it had nearly its usual character, and the mucous membranes were not injected. There was no heat or sensibility on the cranial region.

Similar symptoms have already been observed in similar circumstances, and attributed, by observers, to inflammation of the arachnoid membrane, consecutive to the extension of inflammation of the jugular vein to its roots. In the case which we are now describing, the absence of every sign of general inflammatory reaction and of every febrile movement would not permit us to admit the existence of arachnoid inflammation. We rather imagined that the phenomena that were produced were attributable to a cerebral action determined by the vacuity of the intestinal canal. We know that, in the human being, too long abstinence produces strange fancies and hallucinations. This horse was turned towards his manger, and oats were placed before him, which he devoured with avidity; and by mere good luck the venous clot was sufficiently solid to resist the movements of the lower jaw, and, when the digestive action was brought into play, the nervous phenomena ceased completely.

AN ACCOUNT OF THE VETERINARY INSTITUTION AT VIENNA.

By W. R. WILDE, *M. R. I. A.*

AMONG the many noble institutions of this great country, well-arranged and liberally endowed as they are, there is none that stands more prominently forward, in a sanatory point of view, than the system of veterinary education and the veterinary institute of Vienna. This truly imperial establishment, the Veterinary College (*Thierarzenei-Institut*), is beautifully situated in one of the extensive suburbs that surround the capital. It was erected in 1823, chiefly through the instrumentality of the late Proto-medicus, Baron Stifft, who, whatever may have been his failings in other respects, certainly used the great influence he possessed with the late emperor to effect much good in erecting many valuable medical institutions in the kingdom. It is now placed under the direction of the university.

This is both a military and civil academy for the education of the *Veterinaires* of the Austrian army, and also the country epizootic and general veterinary practitioners, the majority of whom are salaried government officers.

The organization of this institution published in 1824, and of that at Milan in 1837, occupy a considerable space in the catalogue of laws that regulate the medico-chirurgical studies, and shew the great interest they at present receive from the Austrian government. This institution is governed by a director, Dr. G. T. Eckel—a learned and ingenious man—and also five ordinary and four extraordinary professors. The state supports four pensioners, or bursars, at a yearly salary of 300 florins in the establishment, who subsequently fill the offices of provincial veterinary surgeons (*Thierärzte*), and also eighteen military pupils. The period of study is three years for the former and two for the latter.

The course of education is adapted to all who study medicine in any of its departments, as well as to the special practitioners in the diseases of domestic animals, cavalry-officers, horse-trainers, land bailiffs, and agriculturalists; smiths and farriers; inspectors of meat-markets; sheep and cattle-doctors; shepherds and huntsmen, &c. A portion of the veterinary course is attended by the students in the higher branches of medicine and surgery, as those of this class who may have graduated in the veterinary institute are invariably preferred in making the appointment of district physician, and great numbers of the medical men, in the remote

and country parts, are also approved veterinary surgeons (*Approbirte Thierärzte*).

The institute itself is very extensive, and is in most admirable order; it is not confined to the education of mere horse-doctors, but possesses hospitals and cliniques for the reception of every description of cattle and domestic animals. The only establishment of the kind that at all equals it is that at Alfort, near Paris.

There is a good library, an extensive collection of surgical instruments, shoes, and shoeing apparatus, and one of the most interesting museums of comparative anatomy in Vienna; indeed, this is the only school where that useful and necessary branch of science is taught. The collection of monstrosities among the lower animals, as well as that of the native Mammifers of Austria, in this department is well worthy of the inspection of the curious. The course of instruction is divided into the ordinary and extraordinary lectures in the following manner:—

FIRST YEAR.

- 1.—Natural History and the Hygiene of domestic mammiferous animals; daily, from 9 to 10 o'clock, during the months of October and November, by Professor J. E. Veith.
- 2.—Anatomy and Physiology of the Horse and other domestic animals; 10 to 11, daily, for six months. Professor, Jos. Hörmann.
- 3.—Theory of Hoof and Cloven-foot Farriery; October and November, daily from 11 to 12. Professor, Joh. Langenbacher.
4. Elements of Chemistry and Physics; December to February, daily, 11 to 12. Professor, Dr. A. L. Buchmüller.
- 5.—General Pathology and Therapeutics; April, May, and June, daily, from 11 to 12. Professor, Dr. A. L. Buchmüller.
- 6.—Medicine; May and July, daily, 9 to 10. Professor, Dr. A. L. Buchmüller.

SECOND YEAR.

- 7.—Medical Clinique in Hospital (*Krankenstätten*); five times a week, during the Winter Semester from 7½ to 8½, and in the Summer Semester from 6½ to 7½, by Professor Hayne.
8. Surgical Clinique; at the same hours during a similar period. Professors, Hayne and Langenbacher.
9. General and Special Veterinary-surgery; three months, from December to April, five times a week, from 11 to 12 o'clock, by Professor Veith.

- 10.—Special Nosology and Therapeutics, for diseases of domestic animals; eight months, from 8 to 9 in summer, and 9 to 10 in winter, by Professor Hayne.
- 11.—On the care and management of Studs; March and April, daily, 9 to 10 o'clock. Professor Langenbacher.
- 12.—Upon the external Anatomy of the Horse; in May, daily, from 9 to 10 o'clock. Professor Langenbacher.
- 13.—Surgical Operations; in June, daily, 9 to 10. Professor Langenbacher.
- 14.—Judicial Veterinary Medicine; May and June, daily, 11 to 12, by Professor Veith.
- 15.—Repetition of Anatomy and Physiology; during the entire year, as in former course.
- 16.—Dispensary or Ordination in Hospital (*Krankenstätten*); daily, 4 to 5, during entire course. Professors, Langenbacher and Hayne.
- 17.—Epidemics, epizootics, and Veterinary Police; four months, three times a week, $5\frac{1}{4}$ to $6\frac{1}{4}$. Professor Hayne.
- 18.—Instruction for Police Agents, Sanatory Officers, and Meat Inspectors; May and June, three times a week, 6 to 7. Assistant-Professor, B. Stütz*.
- 19.—Instruction for Shepherds and Herdsmen; October and November, daily, 6 to 7. Correpetitor Stütz.
- 20.—Instruction for Huntsmen; April and May, twice a week, 6 to 7. Correpetitor Stütz.

Graduated physicians and approved surgeons (*Approbirte Wundärzte*) need not attend the lectures No. 4.

Physicians and surgeons wishing to become district officers, as *Kreisärzte und Kreiswundärzte*, must attend the lectures No. 17.

Riding-masters, horse-breakers, &c., must attend the lectures Nos. 1, 2, 3, 11, 12, and 14.

Land-bailiffs and agriculturists, Nos. 1 and 17.

Smiths and farriers, who take out a two-years' course, attend those from 1 to 17, inclusive; and such, attending but one year, frequent the lectures Nos. 2, 3, 6, 7, 8, and 10.

A course of repetition lectures is likewise delivered, during the entire year, upon anatomy, by Dr. Rabbas; hoof-farriery, by Herrn J. Berner; chemistry and physic, by Dr. Blaiwais; nosology and therapeutics, by the same; veterinary-surgery, by Herrn Stüts; and the external anatomy of the horse, by Herrn Berner.

* The assistant-professors are here denominated *Correpetitors*, and receive from four to seven hundred florins yearly.

This course is chiefly intended for the military smiths and farriers (*Curschmiede*).

The value of such an institution in an agricultural and cattle country like Austria is too manifest to require comment.

A reference to the foregoing programme of study shews us that there are many descriptions of veterinary practitioners distributed throughout the country—first, the general medical practitioners who may have graduated in the Veterinary Institution (*Thierarzenei-Institut*); second, the special veterinary practitioners, who must also be surgeons (*Approbirte Thierärzte*); smiths and farriers (*Gelernte Schmiede*); land-bailiffs, agriculturalists, and managers of estates (*Landwirthe und Oekonomen*), who must have received a previous good general education, and have attended lectures upon agriculture in a university or lyceum; equerries and riding-masters (*Officier, Beretire und Stallmeister*); as also cattle and meat inspectors (*Vieh-und Fleischbeschauer*), whose business it is to inspect the markets, as well as to examine all cattle exposed for sale—these persons are generally butchers; herds and shepherds (*Hirten und Schafmeister*); and, lastly, huntsmen (*Jäger*), whose business it is to attend more particularly to the treatment of dogs;—the whole being committed to the care of a district veterinary surgeon (*Landes-Thierarzt*), an immediate government officer placed under the direction of the *Protomedicus*. There is one *Landes-Thierarzt*, with a salary of six hundred florins, in every province, who furnishes sanatory reports from each district to the general medical direction.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from page 240.]

SLEEPY STAGGERS, OR APOPLEXY.

THE brain is also subject to a disease which the farriers call staggers, and which assumes two very opposite appearances. One is termed the mad, and the other the sleepy staggers.

I imagine the sleepy staggers to be a species of apoplexy, and relieved accordingly. The oppression on the brain, threatening immediate death, will be relieved by copious bleeding from a very large orifice. Purgatives should be also administered, with pretty strong clysters, and ligatures round the legs will keep the

blood in the extremities, and thus divert it from the head. The symptoms are so striking that few can mistake it. The animal appears sleepy, hangs his head without the power of keeping his eyes open, is perfectly indifferent to every object about him, and frequently falls to the ground apparently insensible.

MAD STAGGERS, OR INFLAMMATION OF THE BRAIN.

The mad staggers, of which I have seen two instances in this country, is, I think, similar to phrenitis, or inflammation of the brain in the human subject, and is relieved by a similar treatment.

It is generally produced by spasms, or gripes in the intestines. Foul feeding causes an accumulation of fæces, which obstructs the bowels, and obstruction in the bowels, by pressing on the veins, impedes the return of blood from the brain. If the habit is irritable, inflammation will ensue. The two cases I have witnessed in camp* were evidently caused by gripes, which, not being timely relieved, produced the mad staggers, which is known by the animal's being very restless, and in continual motion. If at his picket, he is always moving his legs and his head, expressing more uneasiness than direct pain. If he is taken from his picket he runs round, nor ever stops until he falls.

The mode of cure in this disease is very similar to the former, only being more particular as to procuring a discharge by the bowels. At the commencement five or six quarts of blood may be taken from a large orifice; at the same time a very powerful purgative should be administered, composed of one ounce and a half of aloes, and two or three drachms of calomel, which may be repeated in twelve or fourteen hours if it does not operate. In order to accelerate the operation of the physic, strong clysters should be employed every five or six hours, each clyster containing two ounces of aloes dissolved in three or four quarts of hot water, with fifty or sixty drops of the essence or oil of peppermint. If the animal is not relieved in fourteen or fifteen hours, the bleeding should be repeated.

The course of physic here recommended may be thought severe; but when it is considered that the disease will soon destroy the animal if relief is not quickly procured, and that the cure, as in the human subject, entirely depends on a free passage through

* These horses were not in the 25th regiment, nor brought to me until they were in the above situation, which I was informed had succeeded the gripes. In one, a passage through the intestines was procured in about twenty hours, and the animal recovered; in the other, no passage being effected, he died.

the intestines, the propriety of such treatment must be acknowledged.

The disease, I conceive, is much more frequent in this country than is generally imagined, as it is so frequently the consequence of obstruction in the bowels; and the animal is here very subject to great accumulation of gravel, sand, dirt, &c. from the foulness of his forage. I have frequently seen a horse discharge ten or twelve pounds of gravelly matter when under the influence of physic. Unfortunately the native having no knowledge of this disease, the animal is left to die, which he generally does in the course of twenty-four hours. Thus, I believe, many valuable horses are lost, without the least assistance being afforded them.

SECTION 5.

OF INFLAMMATION, ABSCESS, ULCERS, MANGE, STRAINS, WINDGALLS, RHEUMATISM, SORE-BACK, POLL-EVIL, SPAVINS, SPLENTS, &c.

ABSCESS.—Inflammation in the horse arises, perhaps, from various causes; but that to which I principally confine myself in this chapter is external inflammation, arising from blows, strains, friction, or any other accident. In this case, the vessels of the part having lost much of their tone and strength, they become incapable of circulating the now oppressing fluid. Hence, in slight inflammations, it will evidently appear that the mode of relief must arise from the application of tonics, as vinegar, cold spring water, sugar or extract of lead, brandy, &c. thereby increasing the strength of the relaxed vessels to perform their functions, and circulate the redundant fluid. Bleeding is also necessary to allay the impetus of the circulation, and that the quantity of blood going to the part may be diminished: this mode of treatment is termed reducing inflammation.

If the inflammation is in a young, vigorous animal, very timely assistance must be employed to reduce it, as the confined blood soon corrupts, or rather changes its nature. The red particles, perhaps, being absorbed, the coagulum forms into matter. This event may generally be known by the heat, tension of the skin, and pain diminishing, and the parts rather swell and palpitate beneath the touch. In this case, the reverse treatment must ensue. Instead of continuing to lower the habit by bleeding and a spare diet, a good warm nourishing one should be substituted. If the animal is very low, cordials may be moderately resorted to, and the parts should be kept warmly poulticed, with bran or meal boiled in milk, or warm fomentations of mango leaves in hot

water, and this will in a short time ripen the swelling, and render it fit to be opened. This operation should never be anticipated, as by opening it too early it may become a tedious, ill-conditioned ulcer, instead of a kind and healthy one. If the abscess should burst of itself, the opening may be a little increased with the knife, pursuing a dependent direction. The time for opening it may be known by a pointed projection feeling soft, and a fluid undulating beneath the skin. This process is the suppurative action, and consequent formation of abscess.

ULCER.

When opened it becomes an ulcer. Every ulcer does not shew these two stages, at least not sufficiently to be noticed. I shall, however, first recommend the mode of treating the ulcers arising from the common abscess.

I must here again object to the mode of farriers, grooms, salistries, &c., wiping the open wound to the bottom, by which they destroy the tender granulations of new flesh, which nature sprouts forth from the bottom and sides of the wound, in order to fill it up; also depriving the wound of the matter, which, so far from being destructive, is nature's richest balsam, is continually forming for the most benevolent purposes new parts and vessels, in order to replace those which are destroyed. The wound also being exposed to the air is much irritated; yet the balsamic qualities of this fluid depend very much on the state of the body, which may be known by its consistence and colour. If it is of a pale yellow, and rather thick, it is healthy. If very thin and greenish, or mixed with blood, it is the reverse, and if the wound is of consequence, the cure must be sought by constitutional remedies; for no local application will produce good matter if the habit is bad; and it is on the qualities of the matter that the cure depends.

If the condition of the animal is too high, he may lose blood, and this may be succeeded by a dose of physic. The ulcer is, however, much oftener found in horses of ill condition; in which case boluses of one drachm of opium, and half a drachm of tartar emetic may be given twice a-day. Bark may also be administered; but I am fearful the quantity required will be too great an obstacle, and its operation may not, perhaps, be so extensive in the horse as in the human subject. A good diet with gentle exercise twice a-day is also proper, if the situation of the abscess will admit of it. When healing, the edges, and even the surface of the wound, will frequently grow above that of the skin, usually called proud flesh or fungus. This is always a favourable symptom, being merely the luxuriant growth

of nature to fill the cavity. These edges may, however, be reduced by touching them with a piece of bluestone for two or three days, or by a tight bandage. The best application afterwards is a piece of dry lint next to the wound, over which a plaister of basilicon ointment, or a mild poultice of milk and meal, or bread, should be applied warm, twice a-day.

The next ulcer to which I alluded is of a putrid or fetid kind, which comes indiscriminately over any part of the animal. It originates from scurf and pimples, which, suppurating, become large ulcers, and, if not timely relieved, they grow very deep, and become very extensive. This disease is very common in this country, and is always considered by the salistry as the farcy. This error would, however, be slight if they knew how to treat the farcy, and acted accordingly.

This disease is generally occasioned by a bad, thin, poor blood. Sometimes it proceeds from bad grooming, or, indeed, from any cause which can impoverish the system. It is not, however, farcy; for it appears indiscriminately on any part of the body; neither is it contagious.

Unfortunately in these cases, as in almost every other, the salistry, which I have witnessed three or four times in the native cavalry, commences by firing, diminishing the animal's grain, and every other mode that may reduce him as much as possible; while the ulcers are merely dressed with some simple ointment, of little or no effect. The consequence was, in the cases above stated, that death, in a short time, relieved the tortured animal from further misery. If, however, an opposite course is followed, the cure is neither difficult nor tedious. Good diet should be allowed; brisk trotting exercise, twice a-day, will be proper if the animal can bear it, and he should be put under a course of the following exciting medicine:—

Take of yellow resin six ounces, Venice turpentine sufficient to soften it to a mass, which divide into twelve boluses, one of which may be given every morning before his exercise.

After these are finished he may take a dozen of the cordial boluses of opium and tartar emetic, which will render the cure more permanent. In the meanwhile the ulcers are to be dressed with the strongest stimulants, as the milder applications would not affect them. These ulcers are generally of a dry nature and of a greenish hue, with a rotten putrid appearance, and they possess very little sensibility. Blue vitriol, finely powdered, may, for the first three or four days, be sprinkled on their whole surface, with a dressing of Venice turpentine over it, which will generally produce a discharge and a clean appearance. The blue vitriol may now be omitted, and an unguent, composed of tar and tur-

pentine, of each one ounce, should succeed it. Every time the dressings are taken off, the wounds should be gently washed with the following solution:—Take corrosive sublimate, in powder, one drachm, spirit of wine, brandy, or arrack, two table-spoonfuls, in order to dissolve it. To this may be added one pint of spring water. This treatment may be thought very severe; but I have often been obliged to have recourse even to spirit of turpentine in the place of water, as their surfaces were so very insensible and obstinate. It must also be considered that the texture of the muscles of a horse are proportionably strong, and the strongest digestives employed for the human subject would be but emollients with the horse.

If the course here recommended is correctly pursued, I can speak very confidently of its success, as many cases which I have had under my directions were, in every instance, perfectly cured in two, three, or four weeks, even when the ulcers were deep, numerous, and extensive; and if three-fourths of the cases supposed to be farcy were treated according to these directions, I am convinced a horse would very seldom be lost from what is usually termed by that name.

EMINENT SUCCESS IN CHOLIC AND CONSTIPATION FROM THE TOBACCO CLYSTER AND THE SUBSEQUENT USE OF MERCURY.

*By Mr. WILLIAM PERCIVALL, M.R.C.S., Veterinary Surgeon
First Life Guards.*

MANY years ago, Mr. William Goodwin having a foal to treat labouring under constipated bowels, bethought himself, after ordinary means had proved abortive, of employing a clyster of tobacco-smoke, and the experiment proved a very happy one, for it was followed by the wished-for discharge of fæces. In later days, Mr. Simonds, then practising at Twickenham, now one of the Professors of the Royal Veterinary College, made similar experiments with an apparatus fitted to Read's stomach-pump, and these likewise have turned out eminently successful. Still there are those amongst us who either doubt the efficacy of the tobacco-clyster, or who have not yet made it part of their practice; and on such persons I would call for attention to a case under my care at the present moment.

The mare, the subject of it, is eight years old, and in fat working condition. At half past eight o'clock of the morning of

the 10th of the present month (June), attendance was desired upon her for having "the gripes." She had been lying down in her bailed stall, among other horses, upon the bare stones, and was, when first my assistant saw her, about to do so again, being evidently in a great deal of pain: she was not, however, allowed to lie down again, but was immediately bridled, and removed into an infirmary-box. Here she had an antispasmodic ball and a common soap-and-water clyster administered to her, which brought away a few light-coloured softish dung-balls, after which she was taken out and exercised. While at exercise, about a quarter past nine o'clock, I saw her. She was sweating from pain, trying all means to lie down, and it was evidently as much as the man who was leading her could do to prevent her. I sent her back to her box, and finding her pulse quickened and somewhat thready, and that sharp pains were still harassing her, I ordered her this drench:—Decoct. aloes co. ℥xij*, tinct. opii, spts. æther. nitric. āā ℥ij, aquæ bullient Əj, M. fiat haust.; and afterwards had her bled to the amount of Oxx, an abstraction she bore without evincing any sign of exhaustion. I also ordered a repetition of her *enema simplex*, and her belly to be well rubbed with a turpentine and ammonia liniment. No dung followed the discharge of the second clyster. By the time all this was accomplished she had lost the poignancy of her pains, and, with the exception of an occasional attempt at striking the belly with one or other of her hind feet, had become tolerably tranquil, no longer manifesting any desire to lie down. The pulse, since the blood-letting, has not been perceptible at the jaw. There has never been any disturbance of the respiration. She was now left to herself for awhile.

2 o'clock, P. M.—She is evincing some return of griping pains, by occasional shruggings of the neck and inflexions of the head, and by alternately lifting her hind feet in raising them towards her belly: not attempting, however, to lie down. No dung. Give her an aloetic clyster.

7 o'clock, P. M.—She has continued free from any relapse of acute pain—is now dull and gloomy in countenance—pulse 60, and rather more perceptible. Repeat the aloetic enema.

June 11th.—She has passed the night without any returning paroxysm; still she occasionally lifts one or other of her hind feet. She has ejected no dung since the commencement of the attack, notwithstanding, at intervals, she has been walked out. Her pulse has gained strength, but does not indicate blood-letting: nevertheless, I felt desirous to know if she would bear any farther abstraction, and accordingly had her opposite jugular opened.

* Every ounce of the decoction contains a drachm of Barbadoes aloes.

Before two pints were drawn she shewed faintness. Administer without further loss of time a clyster of tobacco-smoke, in the usual way, with Read's syringe, and give her calomel 3j, mass. cathartic. ʒss in bol. The enema, after being persisted in for some two or three minutes, first brought away six lumps of dark brown hardish dung: persevered in, it elicited a further discharge of the same description, making altogether about a score dung-balls. Here was pretty clear evidence of the superiority of the tobacco over the common and aloetic clysters, both of the latter having failed to produce any fæculent discharge. Let her now be walked out for ten minutes, giving her previously as much cold water as she will drink, since she refuses to take any more of that which has been chilled. Apply a strong blister all over her belly, and give her this ball every six hours:—calomel 3j, farinæ ʒss, terebinth. vulg. q. s. ut fiat bol.

2 o'clock, P. M.—Has not passed any dung since the morning. Repeat the tobacco enema. This brought away several lumps of dung of the same character as those ejected in the morning.

7 o'clock, P. M.—No farther evacuation. Repeat the tobacco clyster. Again it was followed by dung-balls.

11 o'clock, P. M.—Nothing has passed since 7 o'clock. Let her have another tobacco clyster. For the fourth time the injection of the smoke elicited a discharge of dung. She is continuing her mercurial balls.

June 12th.—In the course of the night she, for the first time since the commencement of her illness, passed dung spontaneously, or without the excitement of clyster, and again she has dunged pretty copiously this morning, the balls being lighter in colour and softer in consistence. Administer an aloetic enema. This also, now, is succeeded by discharge of dung.

7 o'clock, P. M.—The mare has passed dung spontaneously since the morning, and has left off raising her hind feet to her belly, upon which the blister has taken good effect. Her pulse is 50, and tolerably distinct at the jaw. Discontinue the calomel balls, and give her, morning and evening, calomel 3ss, mass. cathartic, mass. diuretic āā 3ij.

13th.—The mare keeps very dull; and, although she eats her green-meat, it is not done with an appetite. Walk her out for a while. She dunged while out. Continue her balls.

14th.—She has passed but one soft lump of dung since yesterday-mid-day. She does not recover her spirits; for although at one time she feeds a little, at another she turns her back on the manger, and stands moping with her head in the opposite corner. Let her take every eight hours calomel 3j, farinæ ʒss, terebinth. vulg. q. s. ut fiat bol.

15th.—She has ejected nothing *per anum* during the night; indeed, the bowels appear once more to be shut up. Give her immediately a tobacco-clyster; but this, though persisted in for ten minutes and upwards, elicited but a single lump of softish though dark-coloured dung. She was afterwards walked out, but nothing more passed. The man says she appeared to have been pawing during the night, from the state he found her litter in this morning. She, however, does not seem so dull as she was yesterday. The pulse is 50, and her mouth cleaner. Some new straw was given her for her bed, which she commenced picking over: at ordinary times, however, she stands with her head averted from the manger in one corner of the box. Let her continue her balls. There seems no other chance for her but that of affecting her system with the mercury. No medicine has been found to act on her bowels, and tobacco has lost its power of stimulating her rectum and colon. If I should be asked why I have not given oily purges, I answer, because I have no faith in them.

16th.—Has passed dung once during the night, and again this morning. The motions are in balls, darker than ordinary, but not remarkable for hardness. In other respects I see but little difference in her. Her pulse has sunk to 44. At longer or shorter intervals she may still be observed to lift one hind foot off the ground, though it is not raised to her belly as formerly. Let her have a simple enema, and discontinue her mercurial medicine: not that the mercury has affected her mouth, but on account of the bowels once more beginning to act of themselves.

7 o'clock, P.M.—Has dunged twice since the morning: it is in balls, and dark coloured, but not very hard. Seems much better this evening, for she eats her vetches with an appetite, and her bran mashes also. Let her be walked out. The exercise produced a third evacuation.

17th.—Better in all respects. Has dunged twice in the course of the night, and again after exercise this morning. Do nothing more to her medicinally. Let her be walked out morning and evening, and restrict her diet to green meat and bran mashes.

18th.—Dungs naturally, and feeds heartily.

19th.—All her legs are filled. Let her take mass. cathartic, mass. diuretic āā 3ss.

20th.—Repeat her ball.

21st.—The swelling has left her legs, but the medicine has, without purging, nauseated her. Omit it.

22d.—Recovering her appetite and spirits, and going on as well as can be wished.

THE VETERINARIAN, JULY 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE veterinary schools on the south and the north of the Tweed have, for awhile, suspended their labours, and the majority of the pupils have returned to their native homes, to compare what they have been taught with the impressions of their early years, and to commune with their parents and friends as to the value of the instructions they have received.

There is no doubt with regard to one fact, that the tone and character of the instructions communicated to the students are very materially improved, and the majority of the pupils hold a higher rank in veterinary lore, and in general literature, than they once did.

Is this the opinion of the generality of their employers? We fear not. In the estimation of *the agricultural world* they do not sustain the high character which they were accustomed to hold, nor are they so often or so exclusively employed in their respective neighbourhoods. It is painful, but can now be of little service to inquire into the cause of this. The alienation that has commenced, and in some situations ripened, between the veterinary surgeon and the agriculturist, or, at least, the want of confidence in the one and the feeling of unjust abandonment in the other, are circumstances that cannot fail of being injurious to both parties.

It is certainly painful to contemplate the altered situation and character of each, and yet the breach might easily be closed, and mutual good feeling be readily established. The agriculturist must be fully aware, or the least careful observation must convince him, that the well-instructed veterinary surgeon, who studies and suits himself to the changing characters of a certain epidemic, saves many more per cent. of cattle and sheep than he who contents himself with one recipe, or applies that recipe in cases of every different and changing character. The fact is undeniable, that he who has good sense enough to adapt himself to

the changing forms of an endemic disease, will save many more cattle than he who has but one prescription for every disease that is brought before him.

Very great improvement has taken place in the education of the veterinary surgeon. At Edinburgh, the truly talented lecturer is wont to urge on his pupils the advantage that will be derived from lectures on agriculture and chemistry and natural philosophy, in addition to those which are obtained from the anatomy and physiology of the horse; so, in the St. Pancras school, in addition to the anatomy and physiology and pathology of the horse, as expounded by Professor Spooner, are the functions and diseases of cattle, by Professor Simonds, and the chemistry and agricultural science of Professor Morton.

Then, I would urge it upon the young pupil to make himself acquainted with the chemistry of agriculture, the history and growth and character of plants, and the different processes by which they are brought to maturity. I would have him study the history and character and management of the different breeds of cattle—having also in reserve the anatomy and diseases and management of all our domestic animals. I would have him be perfectly acquainted with these things, and he would gradually regain the esteem and confidence of the agriculturist, and be his chosen friend and adviser. This is the course which he should pursue, and thus he will be rewarded in its pursuit.

It is scarcely possible to conceive of two persons who are, or ought to be, more perfectly identified in pursuit and in interest than the agricultural man and the veterinary surgeon. That was an unfortunate day which so widely separated them, and induced the former to trust to recipes, which, in very few cases, were perfectly applicable to the state of the case, which could not change with the changing characters of the disease, and which were often absurd and injurious.

The agricultural societies, which are now so rapidly and widely spreading through the country, may speedily, and doubtless will, bring once more together those who ought never to have been separated. There may be, at first, some coldness, or even alienation; but this will soon pass away, and not only a cordial feeling will be elicited, but the aid which each derives from the other, and the mutual confidence that will be produced, will be speedily felt and heartily cherished.

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LECTURES ON HORSES.

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THE bones below the hock being the same in number and kind as, and similar in structure to, those below the knee, and their relations and uses being alike, there will be no need here to add anything to the descriptions already given of the cannon and splint, and pastern and sesamoid bones; and as every individual part of the machine, the foot excepted, has now been described, I shall once more take a review of the skeleton as an entire structure, entering more fully and practically than has been done before into the consideration of it as a machine intended for purposes of locomotion and the carriage of burthen. To this end we will first consider

THE PROPORTIONS OF THE HORSE.

In the construction of animal bodies Nature appears to have had two grand objects in view, utility and beauty. An all-skilful hand has so made every "living thing," that, with an exterior calculated to excite our admiration, interiorly it is furnished with every requisite for the performance of those functions for which it was created. How beautifully is this illustrated throughout the animal creation! How beautifully is it further illustrated throughout individual animal mechanism! Not an animal, not a part even of an animal, but what is made and fashioned after a manner excellent in design, inimitable in execution. In what the finite view of man regards as beauty, no animal, man excepted, is allowed to exceed the horse: the well-known admired picture which David has drawn of him in the Psalms; the eloquent allusions Shakspeare and other writers of eminence have made to him; all attest the estimation in which

these great observers of Nature held his form and qualifications ; nor is "the noble horse" less admired and valued, in our country at least, at the present day.

Although beauty and utility, as regards animal bodies, on most occasions are found to go hand-in-hand, the rule is far from wanting exceptions. An individual part—the head, for example—may be small and faultlessly shaped, and yet the possessor of it, as now and then happens among human creatures, may not be highly gifted ; on the other hand, a horse having a plain, even an ugly head, may possess high qualifications. Phrenologists may possibly set these facts in a different light, though as yet the practical horseman has not derived that assistance from the science of phrenology which more attention to it would probably afford him. With a view of arriving at a knowledge of that frame-work of animal machinery from which we might reckon on deriving the greatest power and speed, it was natural enough that any person engaged in such an investigation should seek for a model of a horse, and for one of that description which was known and proved to perform in the most superior manner ; and having succeeded in finding such a model of perfection, it was but natural for him to set it up as a sort of prototype or standard, whereto others might be compared, and whereby their powers might be estimated. Considerations such as these appear to have prompted the first Professor of the Veterinary College, Sainbel, to set about and produce his work "ON THE GEOMETRICAL PROPORTIONS OF ECLIPSE." Sainbel's words in his "advertisement" are, "When first I employed myself in taking the proportions of Eclipse, I had no other object in view than to gratify my own curiosity with respect to the figure, extent, and direction of the parts which compose a race-horse, and to compare them with those of horses of different kinds, for the purpose of informing myself of the mechanical causes which conspire to augment the velocity of the gallop."—"Since it is true, that the construction and direction of the bony and muscular parts within determine the outward figure of the body, a table of proportions, collected from the best race-horses, would be of great service ;" and also "by means of this table, we should be enabled to establish the true conformation of the race-horse, and at any given time to discover whether the breed has improved or degenerated." That Eclipse was a race-horse of the first distinction, both for speed and bottom, no one will dispute. He won more and higher renown on the turf than any horse either before or since his day ; and, therefore, Sainbel had a right to assume that his proportions were, as near as could be obtained from any one individual, such as a perfect race-horse should possess.

By the "proportions" of an animal body is meant the dimensions—the length, breadth, and thickness—of the various parts or

pieces of which it is composed, in the relation that one part bears to the entire structure or to another part: for any individual part may possess in itself very correct relative dimensions, and yet be, as a component piece of an entire structure, out of proportion, or not in symmetry with other parts. The eye accustomed to view animals in regard to their make will in a moment detect any flagrant disproportion in the constituent parts of a body; and yet were the same person asked what the proportions of the faulty piece in the structure ought to be, he could probably only answer you by a reference to the body he had been finding fault with. Sainbel, following a practice instituted by the great Bourgelat, the founder of the veterinary schools in France, was prompted by his example to carry these matters out of the mere pale of speculation and to institute in the British school what already existed in the French, viz. a scale of perfect proportions whereto all horses might be referred, and by which they might be geometrically compared and computed. He had a right to view Eclipse, from his achievements upon the turf, as a horse, take him altogether, as near perfection as Nature in her strange and fanciful variety has made the animal; and he, therefore, adopted his admeasurements as those of the proper proportions of a race-horse. And in order that these proportions might be reduced to a scale, and so be made applicable to horses of all sizes, Sainbel, still treading in the steps of his great master, Bourgelat, first took the measure of the head of Eclipse, and by that measurement computed, in regard to length, all other parts of his body. Whether these chronicled proportions prove of any practical use to us or not, they will always serve to represent what sort or stamp of a horse Eclipse was: a matter so difficult to determine with any exactness from any painting or print of him, knowing, as we do, that painters do not, in general, proceed in their works after any geometrical calculations.

We learn from LECOQ* that the first idea of "proportions" appears in an Italian work published in the sixteenth century; though to Bourgelat are we indebted for their establishment upon a rational basis. Following GRISONIE, Bourgelat assumed as his "unity of mensuration," the head of the animal to be measured; and this he subdivided into three parts, which he called *primes*; each prime into three *seconds*; and each second into twenty-four points; making, altogether, 216 subdivisions. Lecoq has reduced these subdivisions down to hundredths, and has submitted the following scale as that of Bourgelat, with some slight improvements, founded upon changes in the position of the head and that of the hind quarters.

* *Traité de l'Exterieur du Cheval et des Principaux Animaux Domestiques.*

The height of the horse, measured from the poll of the head to the ground, is estimated at three heads' length; from the top of the withers to the ground, at $2\frac{1}{2}$. The distance from the point of the shoulder to the point of the quarter, at $2\frac{1}{2}$ heads' length. The height from the summit of the croup to the ground at $2\frac{3}{8}$. From the summit of the withers to the point of immersion of the neck in the throat $\frac{6}{10}$. From this last-named point to the point of the shoulder $\frac{8}{10}$. From the same point to the mane half a head's length. From the withers, in a horizontal line, to a level with the lowest point of the back $\frac{6}{10}$. From the last-named point, still in a horizontal line, to a level with the summit of the croup $\frac{6}{10}$. From the summit of the croup, extending the same horizontal line, to a level with the point of the quarter $\frac{6}{10}$. From the point of the quarter to that of the stifle $\frac{8}{10}$. From one haunch to the other in a direct line $\frac{8}{10}$. From the point of one shoulder to that of the other in a straight line $\frac{6}{10}$. The greatest breadth of the belly, in a straight line, equal to one head's length. The depth of the body from the lowest part of the back to its greatest dip, the same. The depth from the summit of the withers to lowest dip of chest, 1 head $\frac{2}{10}$. From the summit of the croup to the stifle $\frac{8}{10}$. From the stifle to the hock $\frac{8}{10}$. From the hock to the ground $\frac{8}{10}$. From the withers to the stifle 1 head $\frac{6}{10}$. From the summit of the croup to the elbow 1 head $\frac{6}{10}$.

Two questions will naturally arise in the mind here : one is, can any rules of proportion be ascertained and laid down that will prove of service to us in practice ?—the other, supposing such rules can be framed with any prospect of practical advantage to us, upon what basis or determinate measures ought they to be founded ? I will not offend the accomplished “judge of horses,” by saying that he is likely to derive much benefit from the study of any rules of this kind, however accurate their character ; but I will go so far as to give it as my opinion, that the student of veterinary medicine, or tyro in practice, might gain from attention to such rules that sort and amount of knowledge which would put him, in the course of a short time after his application of them to practice, into the possession of that knowledge which the “judge” had only been able to arrive at either through extensive and manifold observation or a lengthened course of practice. In a word, the student or beginner in such matters would, I do not hesitate to affirm, gain much ground by making that a study, so far as he could do so, which his older professional brethren had obtained but through great opportunities of experience or years of attentive observation. To give a familiar illustration of this :—a man unread in equestrian matters is not supposed to know what parts should be long or what short in the well-formed horse, or what parts should be large,

what small : he might imagine it to be an affair of little moment, whether the head were large or small, the neck long or short, or think that short arms and thighs and very long cannons were as good as the reverse conformations. But a man whose mind had been previously furnished with some notions of proper proportions could never run into these palpable errors. Theory would have taught him differently, and practice would speedily convince him of the truth or untruth of what he had learnt. So far, rules of proportion may prove serviceable : so far, and no farther, do I recommend them to attention.

As every part of the animal machine, to be in just proportion, must not only correspond in its dimensions with the adjoining parts, but be likewise commensurate with the magnitude of the entire structure, it must be evident that we shall not be able to determine this just proportion with any thing approaching geometrical precision, unless we possess some definite measure or scale wherefrom to proceed. The French school, we have seen, took the *head* of the horse as a standard whereby all the other parts were to be measured, and whereto they were to bear certain proportions : others, however, objected to this standard, and assumed the *height* of the animal as the proper primitive measure. In either case a great difficulty presents itself, and Sainbel experienced this. "Nature has so diversified the forms of individuals," says the Professor, "that no common measure can be made to apply equally to every species."—"If each species has its own style of beauty; if even each individual has its own peculiar beauty; if it is not possible to find two horses that perfectly resemble each other, we cannot pretend to assign any one form preferably to another as the rule of beauty for the horse. Were persons the best qualified to endeavour to collect together the different beauties dispersed among the different individuals, they might, indeed, compose a model of each species sufficiently perfect to direct the painter or the statuary, but which would deceive any one who would venture to choose a horse by it for his own use." At length, however, Sainbel met this difficulty by paying no attention to what in form is called "handsome," but solely to "that mechanical construction of the animal from which result the possibility and extent of those motions by the means of which he is enabled to transport himself from one place to another with greater or less speed."—"Eclipse was never esteemed handsome; yet he was swift, and the mechanism of his frame was perfect." Sainbel had a right to come to these conclusions from the performances of Eclipse; and yet the proportions of this celebrated horse varied from those of the standard of the French school, setting up, as it were, another standard in the English college.

The French school, I repeat, regulated their scale of proportions of the horse by the measure of the head: this regulator, however, has by others been objected to; they arguing that it was more in accordance with nature to assume the *height* of the animal as the *datum* of their calculations. It is an easy matter to prove both these methods of proceeding erroneous: the simple question seems to be, which is the least so. In one mare, for example, whose height is sixteen hands, the head measures, from poll to muzzle, twenty-nine inches; in another mare, of similar breeding and height, the length of the head is but twenty-five inches and a half, and we all know that horses of the same height may have backs long or short, legs long or short, &c. Still, as I have observed before, this is not a sufficient reason for us to cast away and despise all rules of proportion as worthless. To all general rules, there are few or many exceptions, and there are no cases in which general rules can be applied with so little success as in the form and action of animals. Even suppose we could estimate the length, and breadth, and thickness of every part concerned in action to the greatest exactitude, still are there other most material circumstances, such as the peculiar texture and construction of the parts, and the amount of vital energy with which the parts are endowed, that regulate in an unknown and incalculable manner the faculties and powers of action and endurance possessed by the animal.

Of all individual parts, the head is that which earliest attains its dimensions, and which is the least affected by that growth of the body, which depends so much upon the circumstances of food, situation, &c. At two years old the head appears to have attained its full development; and, I should say that, as there is less variation in the longitude of heads than in the heights of horses, the head, as an independent part, affords the best primitive measure we can obtain for the foundation of our scale of mensuration.

In Sainbel's "Table of the Geometrical Proportions of Eclipse," the head is "divided into twenty-two equal parts," and thus divided it becomes "the common measure for every part of the body." Aware, however, of the fallacy of this standard, Sainbel adds, "If the head appears too long or too short in a horse, that common measure must be abandoned, and the height of the body taken from the top of the withers to the ground." Lecoq finds the same difficulty, and instructs us in such a case to assume as the "unity of mensuration," two-fifths either of the height or of the length of the body; from which it would appear that the head is to be presumed to be of its proper longitude, when two lengths and a half constitute the measure of either the height or the length of the body of the animal.

We are told by Sainbel, that Eclipse measured 66 inches—

16½ hands—in height ; and that he stood higher by an inch behind than before ; and that this great height was still exceeded by the length of his body, that being three inches more, or sixty-nine inches. It is but rarely that we behold a horse of these dimensions, even among the big Derby colts of the present day ; and when we come to add fair proportion and power and energy to this gigantic frame, we shall not feel so much surprise at his wonderful exploits. What appears most remarkable, however, in the “proportions” of this famous horse, is the smallness or shortness of his *head*, it measuring, according to calculations readily deducible from Sainbel’s mensuration, but twenty-two inches ; a circumstance, seemingly, that gave rise to his subdivision of it into twenty-two parts, each part then being equivalent to one inch. Hence Eclipse’s height being sixty-six inches, was equal to three heads’ length, exceeding that of the scale or regular-proportioned horse by half-a-head ; and the same excess, and three inches added to it, occurs in his length : circumstances mostly, I repeat, attributable to the smallness of his head. Eclipse, therefore, was a tall horse and a long horse, a horse higher behind than before, and withal, a horse possessing a very small head. I shall next month pursue this interesting subject: to me our pride of horse-flesh appears to have lain too long dormant, buried under the neglected geometrical details of our father-Professor.

TWO ABSCESSSES IN THE MESENTERY COMMUNICATING WITH THE INTESTINES, AND AN ABSCESS IN THE OMENTUM.

By Mr. W. A. CARTWRIGHT, V.S. Whitchurch, Salop.

22d June, 1843.—An aged gig mare, the property of J. W. Hopkin, Esq., surgeon, at Malpas, has been subject, during the last five or six months, to repeated attacks of apparent spasm of the bowels while running out at grass. She was several miles from the owner’s residence, and he did not know of her being subject to these attacks until she was brought up home ; consequently she was left to her fate without any remedial means being used.

She has now been up nearly a fortnight, and has had these attacks almost continually, and every thing given to her affording but little relief, she was sent over this day to me.

Symptoms.—She has the appearance of some chronic disease lingering about her, as she is very thin and hidebound ; has the

symptoms of sub-acute enteritis, and is occasionally sitting on her haunches like a dog, and which was frequently observed before while out at grass. The mouth was moist and tolerably natural. She had aloes ζv a few days ago, and which operated. I took Ovj of blood from her, but it was very black and came away slowly, and I did not think it prudent to abstract more; but I gave an anodyne draught. On introducing my hand up the rectum I found the fæces soft, and I could not detect any thing unusual. I ascertained from the servant that she voided her urine in small quantities, and that frequently there was something like blood emitted immediately after she had ceased to urinate; but this was in small quantities. I could not detect any tenderness in her loins or peculiarity in her gait. I got her to void her water: she did not pass above a pint, and which was very turbid, but no blood mixed with it.

Finding that she got no better, an hour after she had the first drink, I gave ext. belladon., spt. ammon. aromat., and a few drops of ol. menth. pip. in some water. In an hour or two after this she was better, and became dry and more tranquil, but was still uneasy. The groom seemed to think, and I was inclined to agree with him, that he might as well go home with her, for that she was very likely to be in a similar state on the next morning. I now, on his starting for home, gave her a strong opiate ball, and ordered that, when she got home, if she was no better, lin. vesicat. should be rubbed on the abdomen, and anodynes be given, combined with aperients; but I, at the same time, wrote that she most probably had some chronic disease of the urinary organs or of the intestines, from which, most probably, she would never recover; and I requested that, if she died, she might be particularly examined, as there was something rather peculiar the matter with her.

25th.—This morning I received a message, desiring my attendance on the following morning to examine her, as the owner intended having her destroyed.

26th.—This morning I accordingly went over, and found she died the night before, about 9 o'clock, with symptoms similar to those she had all along been troubled with, only more violent.

Post-mortem examination.—On laying open the abdomen, a small quantity of serum issued, and many of the small intestines were studded over with large spots of ecchymosis. The peritoneum also was considerably inflamed. The *omentum* was highly inflamed. It was stretched out across the lower part of the abdomen, and united pretty freely in the right flank to the peritoneum. Near to the stomach there was a tumour the size of one's two

fists, containing pus, and attached to the omentum by a broadish peduncle, eight or nine inches long, and weighing, I should think, two or three pounds.

I now removed the whole of the intestines from the abdomen, and separated them from each other, and from the mesentery from one end to the opposite one, in doing which I discovered another abscess, quite as large as the last, and, at from three to four yards from the stomach, and attached to what may be called the ileum.

The intestine in the neighbourhood of the abscess was considerably contracted, and twisted around and about it in a very peculiar way.

The tumour was quite filled with fluid pus, and there was an opening out of it through which one's finger would pass into the adjoining intestine.

Close up to a portion of the ileum there was another similar abscess, and which also opened into the intestine.

The interior of all these abscesses was dark-coloured and uneven.

The kidneys were rather larger than usual; but they were tolerably healthy.

The mucous membrane of the *bladder* was highly inflamed and thickened, and contained a great deal of bloody mucus.

The *heart* was very large, but was healthy; and the liver large and a little softened.

Observations.—These abscesses, no doubt, had been gradually formed in consequence of her having been exposed during most of the winter in low wet lands adjoining the river Dee; and it is very probable that, from their weight, they would be occasionally obstructing the passage of the food through the intestines, either where they were attached to or suspended over some of the others in the neighbourhood; and that the sitting posture which she often assumed was for the purpose of removing the weight of the tumours to some other part which would not cause pain by its pressure or obstruction. The tumour in the omentum was very loose, and hung by a portion of it eight or nine inches long; and which would be very likely to be suspended occasionally over a portion of intestine, although it was, in a great measure, at the lower part of the abdomen.

On the 5th of February last I fired this mare's fore legs for a "sprain in the back sinews;" and to-day I examined the legs. The seat of disease in each was a great thickening at the back part of the leg in the tendon of the flexor pedis perforatus muscle, from the knee to the fetlock; but it was worse towards the lower part. The tendon of the flexor pedis perforans was not at all thickened.

About a week ago she was taking a journey with a heavy load, and, by some means or other, she fell, and had great difficulty in getting up. Soon afterwards she became lame in one of her legs, and, on tracing out the cause of the lameness, I found that portions of the thickened tendon of the flexor perforatus muscle had been ruptured and torn from their insertion on each of its sides a little above the fetlock joint and about the sesamoid bones, and there was effusion of lymph and blood around the parts.

A REMARKABLE CASE OF DETACHED STEATOMATOUS TUMOURS IN THE ABDOMEN OF A SHEEP.

By the same.

“UPON opening a slaughtered sheep, belonging to Mr. John Martin, of this town, last week, there were found four large lumps of fat unattached to the intestines by any ligature or sinew. The largest weighed above six pounds and a half, and the whole more than fourteen and a half pounds. In a few hours the fat congealed into hard suet; and, on the largest lump being severed, it was found quite solid. The interior of the animal was perfectly healthy, and the usual quantity of fat about the loins and kidneys. The circumstance exceeds any thing in the annals of the oldest butcher in Shrewsbury.”—*Salopian Journal*, March 8th, 1843.

In the 2d vol. of the *Transactions of the Veterinary Medical Association*, page 161, there is a case similar to the above, reported by Mr. W. C. Spooner, of Southampton, and which is the first that I recollect having seen an account of; but Professor Spooner, in his remarks on that case, said, “it is not a very uncommon specimen, for we have in the museum many of a similar character; and he had seen several cases where these tumours were floating loose in the abdomen.” Now I am inclined to think, with Mr. W. C. Spooner, that it is rather a “singular” and an uncommon specimen; for I can say, after having made upwards of two thousand post-mortem examinations, upon different animals, during the last twenty years, I never met with one like it. Tumours of different kinds I have seen in the abdomen; but they have invariably been attached.

Professor Spooner believes that these tumours have had an attachment to organized parts, but, from their weight or movement, they become detached. In the human being substances are fre-

quently found in the interior of joints. Sometimes they are loose ; at others they are merely attached to some small pedicles. Occasionally, the interior of the substance is bone and covered by cartilage ; at other times, they are entirely cartilage. These gentlemen are of opinion that these tumours often become detached by some accident to the joint.

I have occasionally met with loose portions of cartilage in the theca of the back sinews, in the neighbourhood of which there has been ulceration of some portion of the tendon.

OVARIAN DROPSY IN A CALF TWO WEEKS OLD.

By the same.

IN May, 1843, I had given to me a beautiful specimen of ovarian dropsy in a calf only a fortnight old, that was butchered for meat. It weighed, with the small uterus attached to it, 13 oz., and I should think the uterus, &c. did not weigh much more than an ounce. It was spherical, and about ten inches in circumference, and its contents seemed liquid, the lower part of which were of a bloody hue. Since it has been macerating in a solution of chloride of soda, I have been obliged several times to renew the solution on account of its being bloody.

TWO SINGULAR CASES OF THORACIC AND ABDOMINAL DISEASE IN THE HORSE.

By Mr. A. S. COPEMAN, Walpole.

KNOWING your desire strictly to investigate all matters connected with veterinary science, and to lay before the profession every information tending to its advancement, I beg to place at your disposal the annexed cases of abscess in the mesentery, the sequelæ of strangles, as I am convinced they are of frequent occurrence among horses and colts. I will briefly relate the history of two out of fifteen cases which have lately come under my notice.

May the 3d, 1843, my attention was directed by Mr. White, of this place, to a valuable chestnut cart horse, six years old, of excellent conformation, and who, with several other horses and

colts in the same yard, was labouring under strangles. A tumour had presented itself, within the last few days, under the lower jaw, hard, tender, and about the size of a swan's egg. A blister was well rubbed in, and in a few days it had entirely disappeared.

From this time no notice was taken of him until the 20th, when my attention was again called to him. His legs were now filled, the pulse 30, his appetite fastidious, and he was dull and mopish. I gave him, morning and night, sulphate of iron, with ginger and columbo made into a ball with common turpentine, and a liberal diet.

May 27th.—He has gradually got worse. The least exertion produces accelerated pulse and respiration, with coldness of the extremities and body generally. The appetite is difficult to please, and he frequently lies down. I now determined to place him on a course of iodine, combined with ginger, gentian, and chamomile, morning and night, made into a ball with common syrup. The iodide was increased five grains every day, and on this day, June 5th, he has taken 3iss per diem.

June 6th.—Pulse 50, feeble at the jaw, but the heart's action is full at the side—respiration 10—visible mucous tissues pale—the muscular parts of his body evidently wasted, yet the belly is full and pendent, with a rumbling noise in the abdomen. Pressure against the walls of the chest occasions flinching and shrinking; he resists it by attempting to bite. The fæces scanty and dry. Give a mild aperient in the morning and a tonic ball at night. An œdematous swelling has made its appearance under the chest.

7th.—Pulse 64; undulation of the jugular veins, extending up to the angle of the jaw; respiration 15. He is occasionally pawing, but not with urgency. Sometimes he lies down with great care at full length, and, while down, he now and then turns his head towards his flanks; when up, his walk is stiff and awkward. The bowels are torpid, and the œdematous swelling increased. Medicine as yesterday.

8th.—Pulse 88—respiration 44, synchronous with the heart's systole and diastole—the extremities cold—the mucous tissues injected—the mouth stercoraceous—a discharge of thick white mucus from the right nostril—constantly changing his position—twitching his tail—resting his legs alternately—turning his head to his sides—frequent contractions of the muscles—the ears pendulous, the eyes sunk in their orbits, the skin retaining its natural gloss, and having done so from the first of his illness, the œdematous swelling beneath the chest quite gone—the bowels have been slightly acted upon by the medicine. Give opium c. creta in starch.

9th.—Pulse 93—can be distinctly felt at any part of the chest—respiration 17—respiratory murmur louder on the right than the left side—a discharge of plastic mucus from both nostrils—pressure against the intercostal spaces of the right side occasions flinching and shrinking, and he offers to bite—he did not lie down last night. Give tonics; insert two large rowels on each side, and one in the anterior of the chest.

10th.—Pulse 100, tone feeble—respiration 30—extremities cold—he is very uneasy—he is frequently walking round his box—pressure on the right costa painful, in fact he cannot bear it—there is considerable serous infiltration into the cellular tissue of the scrotum—the fæces softer. Give an opiate draught morning and night.

11th.—Pulse 90—respiration 15—scrotum tense, tender, and fast increasing in size. Apply a strong stimulating liniment to it, and give tonics.

12th.—Pulse 60, and better developed at the jaw—he does not seem so much excited as before. Apply the liniment to the scrotum. Give tonics.

13th.—Pulse 50—respiration 8—extremities warm—his general appearance improved—he has eaten a fair quantity of food. The scrotum hard at its base, but no fluctuation can be detected. Treatment as reported yesterday.

14th.—No alteration: continue treatment.

15th.—Pulse 69—respiration 20—no appetite—head pendulous—the eyes sunken—a dejected look—fæces fluid—he has not lain down since the 7th until this morning—scrotum hard and cold. Apply hot fomentation to it. Give opium c. creta.

16th.—Pulse 108—respiration 30, and stertorous: he suffers acute pain—frequently lies down—extremities cold—the visible mucous tissues injected—the mouth fœtid—the pupils of the eyes dilated—quivering of the lips—cold sweats on his neck and belly. He died at six o'clock, p. m.

Autopsy.—The Scrotum. The cellular subdartesian tissue in a state of serous infiltration, and several insulated abscesses in its most pendulous parts; the vaginal sac was filled with plastic lymph—the whole of it larger than a man's head.

On opening the abdomen, the peritoneal coat of the large and small intestines, and the mesentery, were thickly hung with firm shreds of lymph, and loose portions were floating about the abdomen, which contained four gallons of serum, presenting a turbid whey-like appearance. The peritoneum was thickened, and exhibiting a dark yellow hue—the mucous membrane of the intestines injected throughout—the peritoneal covering of the liver thickened, and could be easily stripped off—the parenchyma soft

and pale. The thorax contained a gallon of turbid serum in its right cavity, and a large portion of fibrin or plastic lymph intervened between the pleuræ pulmonalis and costalis—firm adhesion in various parts. A portion of lung was likewise firmly adherent to the inferior part of the diaphragm—the left lobe of the lungs vascular, and the bronchi of both lobes filled with white froth. The pericardium contained about three pints of dark-coloured serum.

CASE II.—A year-old thoroughbred filly, of fine symmetry, the property of the same gentleman, was early in May last attacked with strangles in an irregular form, namely, in that of a catarrhal flux from the nose, which it was feared at the time would have caused suffocation; but, by the usual treatment, she nearly recovered her strength and condition in three weeks.

June the 8th.—A large abscess has formed on the side of the neck, just below the bifurcation of the jugular vein. A free incision was made at its most dependent part, and exit given to about two pints of pus. After a few days she, with several other colts, was sent to an off farm.

I saw no more of her until June the 22d, when I was informed by her attendant that she would frequently eat her litter in preference to good hay or corn; that her coat stared and looked rusty; her belly was getting larger, but no symptom of acute abdominal or other pain was observed. He saw her feeding with the other colts at twelve o'clock at noon, and at four o'clock in the afternoon she was found dead.

Autopsy.—The abdomen, when opened, presented large masses of grumous pus lying loose upon the peritoneum, which was highly inflamed, and in the centre of the mesenteric glands were several immense abscesses, which, with their contents—principally pus and large clots of blood—filled a three-gallon pail. One of these abscesses had burst into the cavity of the abdomen, and produced acute peritonitis, which, no doubt, was the cause of the sudden death of the animal, as all the other viscera, &c. were healthy.

A CASE OF INTROSUSCEPTION, AND FILARIÆ FOUND IN THE INTESTINES OF A DOG.

By Mr. THOMAS MATHER, V.S., Edinburgh.

As the pages of your valuable Journal are not so replete with communications on canine pathology as they might be; whether it be from practitioners not bestowing due attention to

that branch of veterinary science, or the cases being few and far between, is a subject which I am at the present moment unable to determine : but if the history of the following cases are worthy of the notice of your numerous readers, they are at your disposal for insertion.

The subject of the present case was a valuable dog, the property of a coach proprietor in this city. It was observed, for two or three days, to suffer from great sickness—it was fidgetty—panting for breath—rolling about—occasionally sitting on his hind quarters in a fixed position, with a dull and languid appearance of his eyes—vomiting every thing that was given to him ; and, at other times, running up and down the stable for a few minutes, and then concealing himself in a corner. The bowels were sometimes constipated ; at other times diarrhœa supervened.

As the owner had obtained a slight knowledge in the curative treatment of dogs, he thought it proper to try some of his own placebos on this animal. A dose of sulph. sub. was given him at different times. Finding that this failed, and that the dog was rapidly getting worse, I was sent for to examine him about a week after he had been first observed ; and—to use his own words—he suspected he had turned yellow from the great quantity of the medicine that had been given him. On inspection, I found that the disease was nearly in its last stage ; and I prognosticated that our patient would die in a few hours. His countenance assumed a dull and dolorous aspect—there was great weakness—the pulse was almost imperceptible in the femoral artery, where it was felt, and the heart's action nearly gone. There was coldness in every extremity—he vomited blood—the skin was yellow, as was the mucous membrane of the eye—there was great thirst, and when he drunk any fluid it was immediately thrown up again : in short, he had all the appearance of approaching dissolution.

As the owner was desirous for me to try something, he was put into a warm bath : this, indeed, was absolutely necessary, in order to restore animation a little. A table-spoonful of port wine was ordered to be given to him every three or four hours. I suggested that, in order to try, if possible, to allay the irritation in the stomach. By this treatment, life was probably supported rather longer than was expected ; but on the following day collapse took place, and he died in the evening.

Autopsiæ Cadaveris.—On examining the body, three hours after death, the following morbid appearances were exhibited :—While laying open the abdomen, and tracing the intestinal canal, I found that the stomach was highly inflamed, with a few patches of ecchymosed spots on its external surface ; also slight ulcera-

tion on its mucous lining. Proceeding still farther, I found a portion of the duodenum completely invaginated within the other, to the extent of about seven or eight inches; and a considerable quantity of coagulated blood anterior to the strangulation, with a total destruction of that portion of the tube.

Continuing my research, I detected some morbid anomalies on other parts of the tube, more especially in the rest of the small intestines—the mucous coat being in a high state of vascularity. Thinking there must have been some exciting cause for this alteration of structure, I began to strip off some patches of the membrane, and, by the aid of a microscope, I detected little encysted spots on the muscular fibres. With my scalpel and forceps I opened some of these; and, on close observation, found them to be a species of filaria coiled up in an annular form. Indeed, all the surface of the interior of the intestinal tube was studded over with them; and some parts were in a state of decomposition. The remaining abdominal viscera participated but little in the disease.

Being anxious to inspect the liver, as to the cause of the yellow aspect given to the different parts of the body, I began carefully to dissect it, as minutely as was done to the intestines; and there I detected a number of these parasites floating in the hepatic duct, and in some of the acini of the liver.

These appearances clearly vindicated me as to the cause of the strange symptoms that were observed in the progress of the disease. The intromission appeared to me to arise from the long-continued irritation of the intestinal canal; and the yellow tint of the membranes I ascribe to the presence of the worms; or it might arise from the total obliteration of the hepatic duct as it entered the duodenum, from the obstruction of that portion of the tube by the strangulation.

Query—Might not these animalculi have been detected in the blood?

LITHOTOMY IN A DOG.

By the same.

THE following observations will, perhaps, be acceptable to your readers, in relation to the annexed case. Having had occasion to be at the knacker's yard in the month of May, concerning the post-mortem examination of a horse, after completing that, my attention was turned towards a large Newfoundland dog, sent there by the owner for the purpose of being destroyed, as he was unfit for any farther use.

Being a little curious about the history of this case, I began to investigate the individual who brought him. He informed me that the animal had been unwell for a long time; his urine had been continually dribbling down his thighs (which were evidently much excoriated), and that there was great difficulty in evacuating the contents of the bladder, which, in a slight degree, were tinged with blood and having a sacculous deposit. He had no appetite, and was greatly emaciated. On that account his master, as an act of humanity, determined to destroy him at once.

As I was desirous to examine him, permission was asked, and a grant obtained. I then set to work to satisfy myself, if I possibly could, of the nature of the disease: and this brought me to the conclusion that there must either be a vesical calculus or some abnormal structure affecting the urinary passages. From my statement of this circumstance to his owner, I obtained him for experiment. However, I was a little sceptical regarding the result of the operation, from the circumstance of the size of the animal, and also his being the first subject that I had had an opportunity of operating on. I proceeded, without any previous treatment, as he was sadly reduced in his whole frame, to secure him properly with webbing, and put him in a right situation for the operation. After this, a small syringe full of tepid water was injected up the urethra, in order to distend it and facilitate the operation. A very small whalebone staff was then introduced along the urethral canal, which requires great precaution, owing to the orifice of the urethra being small. This being done, I cut down upon it at the curvature of the urethra in the perineum, and the staff was then withdrawn. With a bistoury I enlarged the opening in the urethra on the left side of the perineal space, or rather, opposite the ischial arch. The index finger of the left hand was now introduced as a director, with the back of the bistoury against it, in order to carry the incision to the pelvic portion of the urethra and neck of the bladder. Having sufficient scope, I introduced the forceps into the bladder, and seized the calculus at its long axis, but not without a great deal of manipulation and loss of time in introducing the forceps after the stone was removed.

I felt, by means of the sound, several other small stones in the bladder, which were immediately extracted. The parts were then cleaned with a little tepid water; and the dog was released from his situation, much exhausted by the operation, although the loss of blood was trifling during the operation, and it was not necessary to apply any ligatures to the vessels.

He was now led into a comfortable place; and, in about an hour afterwards, he exhibited symptoms of sinking, when I ad-

ministered a little wine and water; but during the day he began to droop—the extreme parts of his body became cold—and, notwithstanding all that could be done, he died in the evening.

The examination after death convinced me of the state of the parts: in addition to the former calculi, there were several others of smaller dimensions. No damage seemed to have resulted to the surrounding parts during the operation: the coats of the bladder were a little thickened, and the ureters enlarged. The calculus was of an oblong flattened shape, very solid, and the size of a duck's egg. Being requested so to do, I sent it to the Watt Institution at Dundee, where all interested in the subject may have the calculus exhibited to them.

The cause of death appears to me to have resulted from the weakened constitution of the animal before the operation was performed.

THE POISONOUS EFFECTS OF TURPENTINE IN THE CASE OF A DOG.

By the same.

IF you think proper, you may insert the subjoined case, as related to me by the owner of the dog; in order to prove to those who are in the practice of administering turpentine, that it is a medicine not often to be tampered with. He was a valuable pointer, three years old, the property of G. Ritchie, Esq., and affected with those parasites called the tape-worm. The owner thought that, if turpentine was a good remedy for the human subject, it could not be bad for the canine species; and, reasoning from analogy, his dog was tried with ʒiij of oleum terebinthin. as a vermifuge. In about three or four minutes after it was administered, the dog began to reel about, his eyes rolled in every direction, and violent convulsions ensued. Being rather alarmed at this, he suspected that he had poisoned his dog; and, having no medicine beside him, he sent his servant for an emetic; but in the mean time, getting hold of a little olive oil, he gave it to the poor animal, which evidently relieved him until the emetic was obtained. After this, a respectable practitioner was sent for, and a little blood abstracted, &c. Ultimately he recovered.

This case illustrates the fact, that the mechanism of the horse and dog is very different from that of man. Even when the structure appears similar, the functions are not so: we must, therefore, acquire our knowledge of the therapeutical treatment of disease from facts, and not from analogy.

A SINGULAR CASE OF GLANDULAR AFFECTION IN A HORSE.

By Mr. J. McLEAN, Jedburgh.

My dear Sirs,—I SEND you the history of a case for insertion in THE VETERINARIAN, in order to increase in a slight degree the number of contributions from the Scottish veterinarians: for one would almost think, from the small number who send their lucubrations from this side of the Tweed, that we had so mean an opinion of ourselves, as not to summon up sufficient courage to write an article fit to be read by our brethren in the south. We proceed, however, to the subject of our present communication.

In the month of April last I was called on to attend a six-year-old brown horse, the property of John Ord, Esq., of Morrislaw. He had been turned out during the whole of the winter on some old grass land, and had been taken up in the preceding month in very poor condition. Although a fair allowance of corn had been given to him, he was observed to labour under a cold a few days before I saw him, and which was paid little attention to, as it was thought that it would pass away like that of the other horses.

On examining him, he was standing with a dull drowsy aspect—his head thrust out—his nose, windpipe, and chest, being nearly horizontal—and he was breathing laboriously from the general swelling of the parts about the throat. He made a noise at every inspiration, indicating the state of the parts within; and, on looking into his nose, the nostrils were found incrustated with purulent matter, and a greenish-yellow discharge issued. The Schneiderian membrane was of a dark livid hue, with petechial patches here and there, which had not as yet proceeded to ulceration, but sadly threatened it. The submaxillary lymphatic glands were enlarged, as was to be expected from the appearance of the nasal membrane, at the same time possessing a hardness and want of feeling. The fore and hind legs were much swelled and spotted over with pimples—evidently absorbent glands—especially the hind ones, about the thighs. Some would have called them farcy buds, although they were not so deeply seated as these generally are. A thin ichorous discharge oozed from many of them.

* We are grateful to Mr. McLean for the gentle hint which he has given to his countrymen. With how many interesting and important cases could our brethren in the north supply us! Our cause is the same; and the pleasure with which we contemplate the onward progress of veterinary science would be mutual.—ED.

The pulse was 72, full and oppressed, plainly announcing repletion of the vessels, although the uninformed would have thought otherwise from the general appearance of the animal.

Before commencing treatment, I had the horse removed to an airy loose box. I bled him until I had made an evident impression on the beating of the artery, and on his system generally. I paid little attention to the quantity drawn, but would say that I took fully nine quarts.

The blood soon coagulated, exhibiting a great deal of the buffy coat: it was tough when broken, and little serum separated from it. I laid freely open the buds on the legs from which there seemed to be any oozing of purulent matter, and administered an aloetic ball, and also blistered his throat.

I left orders for his nose to be frequently well sponged and washed with a weak solution of chloride of lime. His legs were fomented three times in the course of the day, and the opened tumours dressed with a little digestive ointment.

I saw him on the next day, when he seemed to be fully as easy. His pulse was 70, and full. I bled again to the extent of five quarts, and gave a ball containing four drachms of aloes and two of tart. antim., as the one exhibited the day before had not acted. I also continued the same treatment to the legs, &c., on which there seemed to be little amendment. From all appearances, I still dreaded the result of my case.

I saw him on the third day, when the bowels were acting moderately—the pulse not reduced, but of a better character—the sores on the legs and the appearance of the nasal lining not much improved.

On the fourth day there was clearly considerable improvement. The pulse was much reduced—the horse fed better, and cast off his former dull gloomy aspect—the breathing was much easier.

From this day he continued improving, although several considerable tumours formed about his groin, axillæ, and hips, some as large as my hand, and which had to be opened. The strength of my patient suffered greatly, and much emaciation took place; but, with the occasional use of nauseants and laxatives, followed up by tonics, he conquered the fearful disease under which he laboured, and is now running at grass in good condition, although he bears fearful scars on the many parts of his body where supuration had taken place.

A CASE OF CANCER ON THE PENIS OF A BULL.

By Mr. E. BAILEY, V.S., Leicester.

Gentlemen,—HAVING read your last leader, I fully subscribe to the contents thereof, “that alienation, or even coldness, between agricultural societies and veterinary surgeons is passing away, and confidence is once more restored.” Having yesterday attended the meeting, at Derby, of the Royal Agricultural Society of England, I am happy to state that the greatest degree of courtesy was shewn to our profession: this is cheering, and a pledge of our future usefulness.

Having received much information from your valuable Journal, I am in duty bound to aid it; and this being my first communication, should it meet with your approbation, you shall hear from me again.

On the 22d ultimo, being requested to see a bull, two years old, of the Durham breed, the property of Mr. Bishop, farmer, of Thrumeston, on my arrival, I was informed that the patient had been previously attended by a cowleech: his opinion was that he was fired (bull-burnt), and he had given him two drinks for that complaint.

I ordered him to be brought out to a cow: after making several attempts, he drew the penis, which enabled me to discover a tumour on the end of that organ, apparently of a fungous or cancerous nature. This first attracted attention in March last (1843), as, immediately after each copulation, some blood was discharged from the member. Having stated that no permanent cure could be effected without the removal of the fungus by a surgical operation, the owner objected, on the ground that he was afraid he should lose the use of him, and wished that milder means might be tried. Astringent lotions were consequently ordered; but on the 1st instant I was directed to use my own discretion: accordingly, on the 3d, accompanied by Mr. J. Anderson, V.S., of Leicester, we had the animal cast and secured in the same manner as for castration.

The retraction of the penis within the sheath, in conjunction with the size of the tumour on the apex, were troublesome affairs; but by perseverance and tact we succeeded in passing a tape round the penis, and, by a gentle, steady pull, brought it out as much as was necessary. We then dissected off the tumour, weighing 3jss, being $4\frac{1}{2}$ inches in circumference. We excised a smaller one, about three inches distant from the above, with several other warty-like nobs. We afterwards touched the mouths

of the bloodvessels with a budding-iron. Scarcely any hæmorrhage ensued, even before the application of the actual cautery.

In making transverse and longitudinal sections of the large tumour, we discovered all the characteristics of cancer; the surface presenting a fungous excrescence, of a red colour, with ragged and ulcerated edges. A day or two after the operation a dose of physic was given; since that time he has served a cow, and the case has done well.

DISEASED BLADDER.

By Mr. J. TOMBS, V.S., Pershore.

A BROWN horse, twenty-four years old, in good working condition, was put under my care, with the following symptoms:—Quick and weak pulse—profuse perspiration—excessively quick and short breathing—haggard countenance—frequently looking back—lying down often, but not rolling—voiding his urine in small quantities; and was at plough, as usual, yesterday.

I learned that he had been in the habit of voiding his urine very often, and in small quantities, for the last two months. On examination per anum, I found the bladder empty, but hard and thickened. Pressure on it caused great pain.

Although the bladder was so highly disorganized, and the animal in a dying state, I proceeded, with a view to satisfy the owner, to bleed him, and administered opiates, &c. He died in thirty hours from the acute attack.

Nothing of importance was observed in the viscera of the body, but the bladder, the coats of which were very much thickened—the mucous coat bordering on gangrene. The bladder contained a large quantity of pus and mucus, the latter very adherent to the villous coat.

RUPTURED STOMACH.

By the same.

June 24th, 1843, I WAS sent for to attend a three-year-old Welsh colt, the property of a gentleman a few miles distant from this town. On my arrival, I was informed that he was taken ill

when feeding on vetches yesterday. He was housed—bled, and had given to him tinct. opii. and ol. terebinth. for the supposed gripes.

When I saw him, the pulse could not be felt at the jaw. He had a peculiar dejected appearance, and was breathing laboriously. He had been rolling and staggering about on the day before and all night. The skin was dreadfully lacerated about the head and abdomen. I could scarcely hear the heart beat, it acted so feebly. I saw him at seven o'clock, A.M., and at eight o'clock he died in great agony.

During the time I was in attendance, he vomited several times large quantities of half-digested vetches and gastric juice: it escaped through the mouth and nostrils. It was truly distressing to see the poor animal in the act of vomiting: there was crouching, cringing, and violent contractions of the ribs and muscles of the neck, especially the large ones of the neck. They appeared not only to compress the œsophagus, but to draw the cervical vertebræ downwards.

I did not see the stomach after death; but, according to my expectation, it was ruptured, undoubtedly from over gorging with vetches.

On perusing THE VETERINARIAN for this month, I perceive that Mr. Percivall treated a case of constipation of the bowels in a mare successfully by calomel and tobacco injections. He did not give oleaginous medicines, having no faith in them; but I have seen, in many instances, the best effects from the administration of ol. ricini, particularly in costiveness and constipation of the bowels. Farmers' horses, from eating coarse unwholesome food, are extremely liable to constipation; which I generally treat successfully by bleeding, and exhibiting aloes in solution; afterwards give ol. ricini in moderate doses until it operates, with plenty of warm water.

SCIRRHOSITY, WITH ULCERATION OF THE TONGUE, IN A COW.

By Mr. JOHN RELPH, Sebergham.

ON the 14th of January last, I examined a cow belonging to Mr. Grindall, of Skelton, that had for some weeks fed badly; and had been treated, by a *knowing one*, for worm in the tail.

She was now extremely emaciated, wishful to eat, but unable to masticate; and there was a profuse flow of saliva. The tongue

was much enlarged; the dorsum, towards the apex, studded with irregular thick-edged ulcers, with very extensive and hard bases, which emitted an offensive smell. On the body of the organ, to the left of the median line, a fluctuating elevation was felt; and, recollecting the directions given by Mr. Youatt in a similar case, I made a free incision into it, laying open a cavity about an inch in length, which probably contained serum—at least, no pus was distinguishable among the saliva, &c. A lotion of chloride of lime was directed to be used alternately with one of alum, and the animal to be supported with gruel.

17th.—No better. Apply, two or three times a-day, a solution of iodide of potassium with sulphate of copper, and ung. biniod. hydr., once a-day, to the skin underneath the jaw and throat.

The owner soon observed some improvement; and, by persevering with these applications, the animal got quite well.

This seems to prove the utility of the preparations of iodine mixed with those of copper, which, in this case, probably acted both locally and generally. I have had frequent proofs of their value as internal remedies, and also of mixtures of iodine with iron, in cattle practice.

In my last communication, when describing an operation on tumours about the head and throat of cattle (*vide* page 126), it should be understood that the first incision should be carried through the skin only; and, in page 127, line 37, the word *absence* should be substituted for “action.”

Mr. Relph likewise adds a very important observation, to which we solicit the attention of our readers. We give his own language:—

I beg to state that professional engagements, and, more recently, a personal injury, have compelled me to postpone the preparation, for THE VETERINARIAN, of some remarks on the present Epizootic among cattle, which much resembles that described by Mr. Barlow and yourself—only, the alimentary canal seems more implicated; and, in all examinations after death, effusion into the ventricles of the brain was found to exist.

This fact, viewed in connexion with the general phenomena of the disease, leads me to suspect that its real seat has been overlooked: and, regarding you as the arbitrator in these matters, may I suggest the propriety of requesting your friends who may now have the disease under management to pay special attention to these points; and thus to furnish you with materials from which to draw a true inference how far the nervous systems are primarily concerned in the disease.

A CASE OF BLACK QUARTER IN A BULLOCK.

By Mr. J. YOUNGHUSBAND, Greystoke.

May 24th, 1843, I WAS summoned to attend a two-year-old bullock, of the short-horned breed, belonging to a respectable tradesman living at Penrith, but who cultivates a small estate of his own near my residence. The subject of this communication was one of a herd of cattle brought to graze there during the summer; but being very poor at the time of his coming, and being put on good pasturage, the following disease, I believe, was caused.

While travelling towards the residence of my patient, the herdsman said, from the appearance of its going, and the swelling accompanying the lameness, he supposed that it had broke its thigh; and, from the rocky ground on which it was kept, this was not an unlikely result. On my arrival at the place, however, and getting the beast on its legs, I at once saw that it was that most formidable disease denominated black quarter.

We managed to get the beast home as well as we could, and then a very slight examination confirmed my first opinion, and at the same time there was a violent pneumatosis. Well knowing the difficulty, or I may almost say the impossibility, of curing such a disease, I told the attendant that I quite despaired of giving any considerable relief, and that we had better destroy the beast at once, or let the animal perish from the power of the disease alone, than add to his sufferings by trying to cure what I *almost* considered an incurable malady. He, however, would not listen to this, and said that there were no impossibilities, and that I must pursue my best course of treatment: accordingly, after having ascertained that the beast had a full bounding pulse, I proceeded to abstract blood, and, regardless of quantity, I permitted the stream to flow until syncope was produced. I then took a large broad-shouldered lancet, and plunged it several times into the swelling. There escaped from it a great quantity of blood and air, similar to that which appears from the orifice of a wound in bleeding when air gets insinuated into the vein. Being near home, I went and prepared a strong stimulating liniment, taking with me one of my largest seton needles, with which I introduced three lengthy pieces of tape, smeared with strong blister ointment. After this, I rubbed in a considerable quantity of the liniment, gave a strong dose of purging medicine, and left him, expecting soon to hear that he was dead.

25th.—Much in the same state as yesterday, except that the

pulse was weak and tremulous. There was not, however, any abatement in the swelling, nor were the symptoms considerably worse. The physic, however, had not operated, and, the bowels being in a constipated state, I repeated the medicine, well knowing that if they were not acted upon our chance was small. After well dressing the setons, and rubbing on more of the liniment, I ordered the part to be steadily and perseveringly fomented with scalding hot water every three or four hours; and, as the beast had eaten little or nothing, ordered him a little warm gruel, and left him.

26th.—On visiting him again, I found him with most of the symptoms aggravated: the pulse the same, if not stronger than at first; the mouth hot and dry, and the breathing much accelerated. I now began still more to despair; but, as while there was life there was hope, I pursued my treatment, and bled again until he began to stagger and was only kept from falling by our support. This evidently relieved the feverish symptoms, and gave me some degree of hope. The bowels being only slightly acted upon, I administered more aperient medicine—dressed the setons, &c., and left a little fever medicine to be given during the day.

28th.—An evident improvement has taken place: the beast has ruminated—the pulse is regular—and the ears, horns, &c., of their natural temperature—the bowels well acted upon, and he is inclined to feed, which from the commencement he had refused to do, but, as a succedaneum for which, he had small doses of gruel horned into him, so as to assist nature, and force her.

29th.—I now imagined that I could feel some fluctuation in the part; and, on making a large orifice with a lancet, there issued such a stream of thick corrupted matter as would have filled a small pail. I afterwards enlarged the opening, from which was drawn considerable masses of flesh in a highly decomposed state, which diffused a stench that was unsufferable. I now drew out the setons, as it was plain they had not been introduced deep enough to reach the seat of disease, for they never suppurated.

From this time I may date his recovery, which was rapid; a little debility, however, shewing itself for awhile, which was easily removed by giving ginger, gentian, and colomba. The place was clean washed out with warm water twice every day, in order to assist in forwarding the escape of the dead animal matter, which, for awhile, was discharged in large quantities. After this was got rid of, we syringed the part twice daily, with a solution of chloride of lime, and then with a solution of sulphate of copper.

At the time of writing this, June 29th, the wound is quite healed and he is free from lameness. The bullock appears healthy, and thrives well, except the affected thigh, which seems to be thinner in flesh than the other. With this exception, he appears as if no disease had occurred.

GLANDERS AND FARCY.

By ERINENSIS.

THE subject of glanders must always be one of lively interest to the hunting and racing sportsman, and to horsemen generally : indeed, when we consider the direful consequences resulting from this disease, if it ever breaks out in a valuable stud, we know not any topic which has a stronger claim upon our attention.

A very few years have elapsed since the allied diseases—glanders and farcy—were considered as belonging exclusively to the horse, the ass, and the mule. The late results of scientific inquiry have subverted this opinion, and have proved that these affections are not confined to the quadrumana, but that the human subject is as liable to be affected as either of the animals abovementioned. It has, moreover, been fully ascertained that glanders and farcy can be transmitted from man to the horse by *inoculation*, and *vice versâ*. These are practical truths of much importance to the sportsman—truths which cannot be too well or extensively known, as we have lately seen amply proved and illustrated at the “*ECOLE VETERINAIRE*,” at Alfort, near Paris. Presuming that some information on these subjects would prove interesting and useful to most readers, we propose, in the following essay, to lay before them a succinct view of facts and experiments relating to this disease both in man and in the horse.

M. Waldenger, veterinary surgeon at Vienna, was the first person to direct attention to the liability of man to be affected with glanders. He states that the greatest precaution is necessary in meddling with glandered horses, or those who have died from glanders or farcy, as very serious injury, and even death, often arises from inoculation.

M. Levin published some observations shortly afterwards on the same subject, in which he mentions that a groom had his fingers affected with inflammation, in consequence of operating on a farciéd horse. Tumours precisely similar to those observed in the horse were soon developed in this man's limbs. They were cut out, or the cautery was applied ; and he was ultimately cured by

filling the wounds with small pieces of lint, or cotton, steeped in turpentine.

Sidon, another veterinary surgeon, published a paper about the same time, in which he stated that glanders was transmissible from the horse to man, causing the worst kinds of ulcers. He mentions an instance in which a horse was affected by the disease from a farrier who had a glandered sore on his hand, which came in contact with the animal while he was giving it a ball. The man and the horse both died of the disease.

We might multiply instances of a similar character from foreign countries; but these will suffice.

We shall now briefly narrate certain facts that came under our own immediate observation.

A groom, named Prost, slept in a stable at Paris occupied by a glandered horse. Some days after the death of the animal, Prost was attacked with the same disease, which was characterized by pustular and gangrenous sores over the body, in the nose and throat, beneath the ears, on the glans penis, and on the feet. On the evening of his death, a small quantity of matter was collected on watch-glasses from the gangrenous sores beneath the ear, on the fore arm and the back and shoulder. A foundered mare was then inoculated by a veterinary surgeon with the different portions of matter.

First, At the right nostril he inoculated with the matter by three punctures, of which two were within the nostrils and one without. The two first gave rise to an exudation of blood, but the other produced scarcely any. Secondly, On the white part, or conjunctiva, of the right eye, he applied a small quantity of the matter. Thirdly, At the internal and upper part of the right buttock he inoculated with the matter, applying three punctures. Fourthly, On the internal part of the right armpit he also inserted the matter by three punctures. The left side of the animal was also inoculated in a similar manner.

MM. Leblanc, Dupuy, Vigla, and Desir, gentlemen belonging to the veterinary schools, were present at the inoculation of the horse. A diary of the different results was kept.

On the 13th and 14th no appreciable change could be observed in the state of the parts inoculated.

On the evening of the 15th, at seven o'clock, slight circular and circumscribed redness and swelling were observable round the punctures on the right buttock. At the centre of the swelling a depression was seen, corresponding with each puncture; there was also painful swelling in the region of the left buttock, where the punctures had been made. The circumference of the wings of the left nostril was a little tumefied. There was a discharge of

pale-coloured fluid, in a small quantity, from the internal ala of the nose. There was also effused a small quantity of serum from the internal wing of the right nostril, but the circumference of the punctures was not swollen. The pulse was increased to 48 pulsations in a minute.

On the 16th, at seven in the morning, no change was observed. In the evening the symptoms of inoculation were beginning to be marked.

17th.—At eight in the morning, the tumefaction of the punctures was increased. The tumours are more hot, harder, and more painful. On the side of the upper lip, near the angle of the mouth, two elevated bands are observed, about an inch in thickness, elongated, irregular, and slightly painful. The left eyelids are greatly swollen, and the conjunctiva red. The air expired by the animal has a disagreeable odour, and the nostrils are smeared with fluid. The pulse is still natural and the animal eats well.

18th.—At seven in the morning, the nodulated tumours of the right buttock are united by a band of smaller ones, very hot and very painful. There flows from the nostrils a fluid more deeply-coloured, and more abundant, than has yet been observed. We can now mark the rapid advance of the disease.

19th.—The circumference of the punctures in the nostrils appears more tumefied, especially on the left side. The respiration is more difficult, and all the tumefied parts are very painful. The animal eats little, and that with difficulty.

20th.—Exasperation of all the symptoms. The band on the upper lip is greatly increased, and very painful. All the tumours are circumscribed, and terminate abruptly, precisely like those peculiar to *farcy*. The animal, with much difficulty, is enabled to open her mouth to take food.

21st.—The symptoms of injection are still more marked, and the local pain greatly increased. The disease now proceeded steadily in its course for some days; and, on the twenty-first day from the period of inoculation, the unfortunate animal was destroyed, after having presented all the characteristics of *glanders* and *farcy*. After death, the diseased portions of the horse were excised, and, on careful examination, found to be precisely the same as those commonly observed in glandered animals.

Several useful inferences may be drawn from the foregoing details. In the first place, it proves, beyond a doubt, that it was glanders of which the man died, for a horse, previously healthy, was impregnated with that disease by the inoculation of matter taken from Prost after death. It is well known that the horse usually takes the disease without being inoculated, namely, by *contagion*, as it is called; but, until the foregoing inquiry was

instituted, it was believed that the human subject could not take glanders without inoculation. The reader will bear in mind that the man, Prost, merely slept in the stable where a glandered horse had died; and, farther, that he had no connexion whatever with animals so diseased: hence we may reasonably conclude that this unfortunate man took the disease by *contagion*, and not by inoculation. This conclusion should serve as a warning to all—to gentlemen as well as grooms, ostlers, farriers, *et hoc genus omne*—how careful and how cautious they should be when necessity obliges them to have any connexion with glandered horses.

About the same period, or shortly after, M. Leone, veterinary surgeon to a dragoon regiment, twenty-nine years of age, and in perfect health, had to open a farcied abscess developed in a horse belonging to his regiment. After the operation, he introduced his hand into the cavity, which was covered with matter, in order to explore the extent of the sore. Unfortunately, he had at the time a slight scar or abrasion on the index finger of this hand, which changed its appearance in a few days, and increased in size and became very painful, and covered with fungus-like growths. The wound was cauterized, but did not heal for three months. Three days after the operation, and at the same time that the sore on the finger was advancing, M. Leone recognized the presence of several painful, hard tumours, like those of farcy, developed at the inside of the left elbow. Soon afterwards, the joint itself became painful and swollen. An abscess formed and was opened. Others succeeded, and fistulous sores were established, and the arm continued to be diseased. Six weeks after the operation, the right knee joint became painful and swollen. The tumours here did not break, but the disease attacked the foot and instep, which were swollen and painful. Tumours formed, and soon broke, and still remain open. M. Leone had the assistance of several physicians: but without success. He alleges that he knew many veterinary surgeons who were afflicted with the same unfortunate malady, derived from the same source. The foregoing is an example of inveterate chronic *farcy*.

Very recently we have seen in this metropolis two instances of men suffering from farcy and glanders. One was a groom, and the other a farrier. The former was taking care of a glandered horse, and had a small puncture on one of his fingers at the time, which soon began to throb; and, on examining it, he found a dark spot round the puncture. Swelling of the second joint of the same finger soon followed, and thence passed on to his arm. So rapid was it in its course, that he was obliged to cut the sleeve of his coat in order to enable him to withdraw the arm at night. This broke and ulcerated; and, shortly afterwards, the left leg began to swell and

feel hard and knotty. Although this man suffered from incessant pain and want of sleep, it is worth remarking, that the only thing which seemed to cause him any anxiety was the fear (to use his own expression) that "*he had given the disease to a horse that was perfectly sound when he went to attend it, but soon became glandered:*" his own sufferings seemed lost in this idea.

These are melancholy details; but is it not right that they should be known? They lead us irresistibly to the following general conclusions:—First, That man is liable to the infection of glanders—a disease hitherto supposed to be peculiar to the horse, the ass, and the mule. Secondly, That farcy, which is only a modification of glanders, may co-exist with that disease, as has been proved by inoculating with the virus of the two diseases. With that of farcy we may produce glanders, or *vice versâ*. Thirdly, Inoculation is not absolutely necessary for the production of glanders or farcy; as, sometimes, the simple cohabitation with glandered animals seems to produce these diseases effectually; from which we are led to infer that it is contagious. Fourthly, Glanders, in its severe form, seems to be an incurable malady both in man and horse.

PROPHYLACTIC MEASURES, &c.—Although it is very true that sportsmen—that gentlemen themselves—rarely meddle with glandered horses, it by no means follows that they should not possess information that might be useful for those in their service who may be obliged to do so; and, as there is no cure for glanders, every precaution should be taken to guard against that *memento mori* disease. The following simple measures are those which from considerable experience we can recommend.

Whenever an animal is suspected of being glandered, the groom, or person attending it, should make a strong solution of alum, and keep it by him in the stable. As often as he has occasion to go near the horse to dress his sores, or open an abscess, or remove the halter, or administer medicine, he should immerse his hands in the alum solution, and keep them there for some moments. If there is a cut on his hand it should be carefully covered with adhesive plaister previously. This is not a mere quack remedy, and anatomists know that well, for prior to examining a brain, the most dangerous part of the dead human subject, they use this very remedy in the same way. Alum is an astringent, and by this property it can, for a certain time, stop the pores of the skin of the hand, and, consequently, prevent any absorption of poisonous matter from taking place. Perhaps other astringents, as sulphate of copper, would answer as well, but alum is cheaper, easier managed, less dangerous, and equally efficacious.

We have stated that glanders and farcy were allied diseases;

or, in other words, that the latter was not a distinct affection, but merely a modification of the former; and that the human subject, as well as the quadrumana, was liable to be affected with either. We now propose laying before our readers a brief account of the leading symptoms and appearances of both, as observed in man, and in the horse, and then, by instituting a comparison between them, we shall be enabled to see how far our account of the matter is borne out by facts.

Glanders may appear in the horse in different forms. 1st, It may exist in a simple form, or may be combined with farcy. 2d, These varieties may appear separately. 3d, They may assume a chronic, or an acute form. The same remarks apply equally to the human subject.

The following are the characteristic symptoms of the *acute* form of *simple* glanders in the horse:—Intense inflammation of the pituitary membrane, attended by erosions, which soon pass into chancre-like sores; swelling of the lips and nose; rapid extension of the ulceration, giving rise to a purulent discharge, which often passes into a purplish or bloody and horribly fetid sanies; subsequently, gangrene of the membrane of the nose, with increased discharge, and sometimes with slight hæmorrhage; swelling and pain of the sublingual glands; inflammation of the conjunctiva and eyelids, quickly passing into a livid and swollen state, with an offensive sanious discharge and fever of a putrid or malignant character. Respiration becomes laborious and hurried, and the superficial bloodvessels congested, the animal dying in a few days, or after a longer or shorter interval.

When the foregoing is complicated with farcy, it is called farcy-glanders, and usually presents the following additional appearances:—small tumours about the legs, lips, face, neck, or other parts of the body—these tumours varying in size, and in the rapidity of their progress to ulceration. They sometimes create little inconvenience; but, at other times, are large, painful, numerous, and rapid in their course. They are, at first, hard; soon become soft, burst, and degenerate into foul ulcers, with abrupt edges, and of a pale glossy appearance. Lines of communication are ordinarily observed between these tumours or ulcers, especially when seated on the inside of the limbs. These lines are inflamed or enlarged *absorbents*. Such are the principal features of glanders and farcy in the horse. Let us now turn to the human subject afflicted with those maladies.

Simple acute glanders exhibits the following train of symptoms in man:—Head-ach, irritability of stomach, depression of spirits, prostration of strength, stiffness and severe constant pain of the joints, aggravated by motion and excessive thirst. The sufferer

complains of great heat about the nose and windpipe, accompanied by a copious viscid discharge. The nose and surrounding parts become swollen, hot, excoriated, and of a bright red or livid colour; one or both eyes are inflamed, or completely closed; a profuse tenacious mucus, at first of a deep yellow, but afterwards of a bloody or dark sanious appearance, exudes from the nostrils, and occasionally from the eyes; pustules appear on different parts of the body; the temperature of the skin is increased; the pulse is remarkably frequent, soft, and weak, or undulating; the respiration rapid, weak, and hollow; the tongue dry, rough, and reddish-brown; the thirst unquenchable; the stools slimy and offensive; the voice weak, and the mind incoherent or wandering. Profuse sweat, a livid or gangrened state of the nose and surrounding parts, delirium tremens and restlessness, are also observed; followed by a sinking of all the vital powers, disappearance of the pulse, and death within a very few days; the fetor from the discharges, and from the whole body, towards the close of the disease, being insupportable. When the above is combined with farcy in the human subject, constituting the variety of *farcy glanders*, we may observe the following additional symptoms:—small tumours on different parts of the body, but more numerous on one side than the other, having a glossy red appearance, which soon changes to a dark brown. They also affect the head or even the face, and chiefly on one side. They are painful, soon crack on the surface, and exude a thin acrid sanies. They vary in size, and are generally accompanied with pustules in different parts of the body. The fauces are injected with blood, and of a purplish hue.

The *chronic* form of the disease is, in our humble opinion, a greater affliction than the acute; for, although the symptoms may not be so numerous or so intense, and the individual may live longer, still his life is one of loathsomeness and misery—isolated from his fellow-beings, and incapacitated for any employment, and death itself being infinitely preferable.

If we make due allowance for the greater variety of symptoms observed in the human subject than in the horse. We owe it, perhaps, in a great measure, to the superior intelligence of the former in giving expression to his feelings, and we cannot fail to observe the striking analogy that exists between the leading features of this disorder in both animals. We see clearly that glanders is essentially a disease of the respiratory organs, although other parts may become implicated during its progress. We see, also, that farcy is an affection of the glands and absorbents; and that each exhibits the same, or nearly the same, symptoms, and pursues the same course in the human subject as it does in the

quadrumana, whence it has been derived. Although these varieties of disease are developed in different structures, and although it may not be easy to give a satisfactory explanation of the nature of their intimate relationship, still their identity is a fact which experimental inquiries have fully established. Every reader of this work is aware that the one form may co-exist with the other in the horse; that glanders may appear first, and farcy be superinduced, or *vice versâ*. But recent investigation has gone farther than this in proving that with the matter taken from the nostrils of a glandered animal, free from farcy, we can produce the latter variety of the disease, and often in its simple uncomplicated form, in another animal perfectly free from all disease; moreover, that simple glanders may be generated merely by inoculation with the matter of a simple farcied tumour. Now this is precisely the reverse of that which, reasoning from analogy, we should be led to infer. We might naturally expect that the inoculated matter would produce the exact type of that form of the disease by which it was generated, and not one of a different aspect, and belonging to a different structure. This is an anomaly in the causation of disease, and tends in no small degree to baffle our inquiries as to the source, the *fons et origo*, of the intimate connexion that exists between glanders and farcy. We know, from experiment, that the glands and absorbents of a limb, from the fetlock upwards, become farcied owing to their absorption of the poisonous matter; but how are we to explain the subsequent development of an apparently different affection (glanders) in a perfectly distinct tissue (mucous membrane) from that of the parent variety of the disease? To say that the latter is the result of sympathy would be rather a vague explanation: besides, a serious objection might be started against this hypothesis, viz. if the latter is a sympathetic affection in this instance, why is not the entire mucous tissue involved? Why is it that the mucous membrane lining the respiratory organs only is that which is specifically affected? These are important considerations, as having a direct bearing on the treatment of glanders, which our present knowledge unfortunately does not enable us to explain with sufficient precision and clearness.

We were often struck with the resemblance that exists between the symptoms of farcy and those of a disease occasionally seen in the human subject; we allude to that fatal malady arising from the inoculation of matter during human dissections, or "dissecting wound inflammation," as it is called. The glands and absorbents are affected specifically, and in a precisely similar manner to that of farcy. The disease spreads rapidly along the absorbents of the arm, and may be seen forming red lines from

the wrist to the bend of the arm, and above it. The glands of the axilla, and those above the arm, become swollen, tense, and exceedingly painful. Malignant fever ensues, and the patient sinks rapidly. If the sufferer survives long enough, the swollen glands burst, and present the same appearance as those we have seen in individuals suffering under farcy. There is this difference, however, between the causes which produce them:—farcied or glandered matter, or an atmosphere contaminated with their effluvia, will produce farcy; but the matter of a fresh healthy subject is as likely, some think more so, to engender dissecting wound inflammation as that of one in a state of decomposition. A fresh human brain is more dangerous to examine than a subject dead of the cholera!

The resemblance between the symptoms of farcy and the disease abovementioned does not apply to glanders in its simple form, for none of the characteristic features of the latter affection are observable in inflammation resulting from dissecting wounds. We may also mention in this place that the post-mortem appearances of animals dead of farcy glanders are remarkably similar to those of scrofula and consumption in the human frame. The “tubercular depositions” in different parts of the body, and especially in the lungs, characteristic of these melancholy diseases, have been observed in the bodies of glandered horses. This is, I believe, the only instance of analogy between these maladies and any others that “flesh is heir to.”

Among the different “causes of glanders in man” that have been enumerated by writers, we had not observed that arising from the posthumous examination of glandered horses: an example of this kind, however, has very recently occurred in L’École Vétérinaire, at Alfort.

Auguste Perin, student in the veterinary college at Alfort, had, after being affected with syphilis about a year ago, had chancres and buboes, which had been cured after three months’ treatment. Five months after, Perin was directed to examine a horse affected with acute glanders, and to note down all the particulars, and make a post-mortem examination of the case. Having done so, he became stupid and melancholy, his face pallid, his appetite failed, and shivering fits came on.

On the 28th of August he underwent his practical examination, and the horse on which he had to perform his operation had been affected with glanders. Perin was then seized with intermittent fever, which yielded to the administration of quinine.

On the 13th of September he came to Paris, and went very much about; and, on his return to college, took to his bed, com-

plaining of violent pains in the muscles of his arms, neck, and back. On the 14th, there was a thick, sero-purulent discharge from the right nostril. On the day previous, a slight eruption had appeared, accompanied by an erysipelatous redness on his right cheek. The left cheek appeared as usual. His pains were now much more intense; he blew his nose often, and remarked frequently on the matter which came from it, to which he was continually applying his finger with great anxiety. His intellectual faculties seemed undisturbed, and he answered all questions correctly. On the nights of the 15th and 16th he was very restless and delirious, and fell into profuse perspirations. His respiration was hurried and noisy; the slightest motion occasioned pain; and he died on the morning of the 17th, at half-past eight o'clock.

At the inspection of the body after death, blood was found infused on the brain. The lining membrane of the nostrils had a reddish violet appearance, and, on the right side, there was a row of small ulcerations; on the external side were several openings of small abscesses. There were also abscesses in the lungs exactly similar to those found in glandered horses.

We may draw the following inferences from the foregoing case:—1st, That the patient had come in contact with a horse affected with glanders, and that he lived under the most favourable circumstances for engendering the disease—for, while yet struggling with the first affection, he had opened a second glandered horse. 2d, The suddenness of the death must be ascribed to extravasation of blood on the brain. 3d, The ulcerations in the nasal cavity were identical with those which veterinary surgeons term chancres, and the discharge from the nose similar to that from glandered horses. As to the nature of glanders, it is evidently the result of a specific morbid matter contaminating the surfaces and parts to which it is applied, and also the result of an atmosphere poisoned with the effluvia of glandered matter affecting the organic functions and inducing certain alterations. It is worthy of observation, that all the exact and useful details which we possess relative to glanders have been obtained since that disease was first discovered in the human subject.

We have stated in our first article on the subject under consideration that we have little to expect from any plan of treatment hitherto proposed, either for glanders or farcy; and, in the absence of any antidote for these fatal maladies, our only resource is prophylactic measures. As, however, there are certain medicines that have of late been very strongly recommended in the treat-

ment of glanders, we shall conclude this paper with a brief summary of them.

Warm turpentine embrocations, turpentine taken internally in often-repeated doses, chloride of soda, camphor, kreostote, quinine, vapour baths, or the inhalation of vapour having the fumes of camphor diffused in it, have been severally recommended. In France, the veterinary surgeons have found much benefit from purgatives administered in repeated doses, and the acetate of ammonia; also from the use of mercurial frictions.

The veterinary surgeon of the 13th dragoons treated this disease in a horse by putting a quantity of scalded bran mixed with Venice turpentine into a horse-hair bag, and tying it over the animal's head, the whole body of the animal being wrapped at the same time in a large blanket wrung out of scalding water, and covered with several horse-cloths. This treatment procured a profuse sweat and free discharge from the frontal sinuses and nostrils, and promoted the healing of the ulcerations.

Of all the preparations abovementioned, none has obtained more notoriety than the kreostote. Dr. Elliotson, who first recommended it, considers it as almost a specific for glanders. He states that, with a sedulous injection of kreostote in solution up the nostrils, he removed the whole of the symptoms of a case of chronic glanders in a very few weeks.

A singular case, corroborative of the foregoing opinions, is related by Mr. Ions, veterinary surgeon at Waterford.

"On the 15th of last month," says Mr. Ions, "my son was attacked with a severe cold, which continued bad for some days, although all the usual means were adopted. At length the cold got better, but the tonsils remained very much inflamed and enlarged, and there was a small sore in the ala of the right nostril. On the 20th, he had occasion to examine a brewery horse, belonging to Mr. Cherry, of this city, that was labouring under acute glanders. The horse snorted in his face, and covered it with nasal discharge. My son wiped it off with his handkerchief, and thought no more about the matter. On the 22d, the swelling of the tonsils continuing, a blister was applied to the throat. The result was somewhat extraordinary, for, instead of a serous discharge, an abundance of well-formed purulent matter exuded. On the 24th, he felt very unwell; his nose was exceedingly sore, the breathing through it quite obstructed, and the right eye slightly affected; the pulse was 110, with a profuse discharge of a ropy glairy appearance. A physician was immediately sent for, who ordered aperient medicines and the local application of a solution of the nitrate of silver. On calling the next day, he found a large ulcer on the lining membrane of the nose, which

was extending upwards. He ordered the solution already prescribed to be injected up the nostril, and also small doses of calomel. Carrot poultices were applied occasionally, and gave temporary relief; sarsaparilla was also prescribed.

"The disease soon began to assume a most alarming appearance. I urged the medical attendants to have recourse to kreostote. They consented, and prescribed an ointment in the proportion of one drachm of the kreostote to seven drachms of lard. The slightest application of this produced the most agonizing pain, and, of course, it was immediately discontinued, and the kreostote condemned. I affirmed that a fair trial had not been given it; and, as they considered the case of my son hopeless, I respectfully told them that I should pursue my own course.

"There was now profuse nasal discharge, accompanied by the most offensive smell, and ulceration extending into, and seeming to occupy the whole of the nasal cavities. There was great prostration of strength, cold perspirations, pulse 112, laborious breathing, and every other appearance of approaching death.

"I added two minims to an ounce of water, and injected the mixture up the nose as high and as universally as I could. I pledge my honour that, after the third injection, an almost magical effect took place: the discharge, in a great measure, ceased; and two days after the ulcers began to assume a healthy appearance, and have since rapidly improved.

"The ulcers have now lost their chancrous character, and are assuming a healthy granulating appearance. His diet was nutritious, but no solid food was allowed; and, in the course of every day, he drinks a tumbler full of good ale: yesterday, he rode out for an hour."

Without pledging ourselves for the scientific accuracy with which cause and effect are made out in the foregoing case, we, nevertheless, think it worthy of perusal. For our own parts, we should be inclined to argue, that as glanders is not merely a local disease, *ergo*, no local application could necessarily restore a structure affected with it to perfect health. It is more a constitutional than a local affection; and if we wish to eradicate a malady which pervades the entire system, we must go deeper than the surface before we can obtain that desired end: any other *modus medendi* must be regarded as sheer quackery.

Sporting Magazine, March 1841, p. 100.

THE VETERINARIAN, AUGUST 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE greater part of our readers are, or should be, in the habit of perusing "The Mark Lane Express," and "The Farmer's Magazine," periodicals which, under the excellent superintendence of Mr. Shaw, record every thing that is of importance to the agricultural world.

During the last month the Royal Agricultural Society held its annual meeting at Derby. It was most numerous attended; and, were it not for a misunderstanding that took place in regard to the situation of the exhibition of the implements of husbandry, and an omission which the writer of this account will feel it his duty to mention, not a fault could have been found with it.

There were present, among many others, at the Mayor's banquet, the council dinner, and the different exhibitions, the Dukes of Devonshire and Richmond—the Earls Spencer, Hardwick, Howe, Ilchester, Burlington, Scarborough, Harrington, and Yarborough—the Marquis of Downshire, and Viscount Torrington—Lords Morpeth, Stavordale, Waterpark, Scarsdale, and Bridport—the Honourable R. Clive, J. Ponsonby, W. Bagot, E. Everett, E. Moore, and W. W. Wilson—Sir Charles Morgan, H. Hoskins, J. Johnston, H. Wilmot, S. Crompton, C. Lemon, R. Rice, R. Heron, and R. Price—Col. Chaloner, and Captain Story—Messrs. P. E. Buller, Childers, Hayter, W. Miles, Pendarves, P. Pusey, Stansfield, Strutt, Mundy, Cavendish, R. Clive, W. Evans, D. Barclay, Members of Parliament—Professors Owen, Buckland, Playfair, Sewell; the High Sheriff and Recorder; the American Minister; the Rev. A. Carson, Rham, and Smythies; and Messrs. Ellman, Grantham, Hillyard, Kinder, Barker, Hudson, Shaw, Shelley, Weald, Wiltraham, Wilson, C. Stokes, Chaplin, H. Colmar, Davenport, Gamble, Legard, Barber, Godfrey, Wentworth, W. Cope, E. W. Wilmott, J. B. Crompton, Karkeek, H. Colman, Bracebridge, Strutt, Stansfield, Hobbs, Jones, &c.

The business of Monday was principally confined to the inspection and selection by the judges of the various implements for trial. The spot selected for the show-yard was at Litchurch, about a mile from the town ; but, from some misunderstanding on the part of those who had the arrangement of this department, the piece of ground originally selected for the trial of implements could not be had. According to some statements, the council had neglected to give the owner of the land a decisive answer as to whether it would be required or not, and it was therefore not ready ; while it was reported in other quarters, that the holder of the land wished to make a market by demanding a high price for the use of it. Whatever was the cause, it naturally led to much dissatisfaction among the instrument manufacturers. The subject was ultimately laid before the council, who did all that, under the circumstances, could be done ; and they engaged a piece of ground on the Uttoxeter road, to which the implements were conveyed and arranged for exhibition on the following day. It was the most extensive and excellent display of implements of husbandry of every kind and description ; but it was impossible, from the cursory examination of a few hours, to estimate the comparative advantages of each, or to attempt to do justice to a tenth part of the ingenuity and merit displayed on the occasion.

There were no fewer than 113 distinct stands, covered with every kind of agricultural implement, and a very fair majority of them being plain and palpable improvements. Mr. Ransome, of Ipswich, had no fewer than 58 separate and distinct machines ; Mr. Stratton, of Clarke-street, Bristol, exhibited 55 distinct ones ; and Mr. Dean, of Birmingham, 51.

In the evening was the dinner given by the Mayor : some very interesting toasts were proposed, the best among which was "Prosperity to Agriculture," proposed by Mr. Hillyard, President of the Northamptonshire Farmers' Society. Long, long may the veteran be spared !

He said that "it was a formidable thing for most men in the prime of life to address a meeting like the present, in the presence, too, of some of the most distinguished speakers of the present day ; but it was much more formidable to one who had entered into his seventy-seventh year, and who had neither the

power of voice, the strength of nerve, nor capability of arrangement of thought, which he might have possessed when twenty years younger. He, therefore, had to request those who were then sitting in judgment, that they would not only make due allowance for the want of ability in the speaker, but would bear in mind that which should never be lost sight of in the judgment of cattle—‘age to be taken into consideration.’ For more than forty years the chief part of his time had been devoted to the study and practice of agriculture. He would not then enter on farming subjects; for those he would, Abernethy-like, refer them to his book on ‘Practical Farming and Grazing,’ which was not a collection of the sayings and doings of other men, but the detail of his own proved farming practices. He had been brought forward to respond to the toast of ‘Success to the Royal Agricultural Society of England, and the practical farmers of the country;’ probably, from having been President of the Northamptonshire Farming and Grazing Society ever since its establishment, now four-and-twenty years. That society had gone on prosperously from fortunately having had the liberal patronage of the noble lord, our president elect (Earl Spencer), who might now be duly styled the great patron of English agriculture. Local societies, like this, had been one great means of the founding this great national society; and they might now be considered as tributary streams flowing into the great national reservoir of agricultural information. The Royal Agricultural Society of England had fully answered general expectation; for, although its establishment could only be called of recent date, there were seen, in almost every part of the country, improvement in the cultivation of the land. It had created a desire of improvement in the generality of practical farmers. It had been the means of dissipating many long standing farming prejudices, and it had opened the eyes of the slovenly and parsimonious, and convinced them that they had lost money, by loss of produce, from their niggardly expenditure in manual labour. From improvement of education had arisen expansion of liberal ideas in the rising generation of farmers, and there would, he trusted, be annually a less number of the unserviceable members of the community. This society had been the means of producing much farther good. It had added to

the number of landed proprietors who took an interest in agricultural pursuits. This he conceived likely to be beneficial to many tenant farmers, from believing that those who really knew what farming was were generally the most considerate and best landlords. The society had infused into many landlords, who previously from want of due consideration or proper representation from their agents had not been famed for it, a spirit of liberality in assisting their tenants in the requisite expenses for the improvement of their land, and erecting all necessary farm buildings, with convenient yards, to enable their arable tenants to winter the required number of cattle to turn their straw into good manure. It was to be hoped that such liberal spirit would prevail in all the landlords of the country. He was rejoiced to have this opportunity of dispelling the idea that in his agricultural writings he had held science in too slight estimation. It probably might have appeared so from his having felt somewhat piqued on being told, on the establishment of this society, not by the scientific themselves, but by some would-be farmers, who had formed many extravagantly high notions of what was to be effected by science, that he and others, who had devoted a great part of their lives to the study and practice of agriculture, knew but little, and must be taught by the scientific. He did not mean to say that the present farming throughout the country had arrived at such a state of perfection that it could not be improved; on the contrary, he believed, that from mechanical science, which had brought about such great improvement in agricultural implements, and combined with chemical and geological aid, some of the mysteries of nature might possibly be so developed as to enable the cultivators of the soil to obtain a larger produce from it than they hitherto had; expressing at the same time his firm conviction, drawn from his own practical experience, that although, by patent manure, a great quantity of produce could be obtained, yet there was a boundary beyond which nature and the soil could not be forced to produce corn. There were many new, and some he believed to be valuable, manures; but he doubted whether any of them would be the means of causing such an increase of produce as would repay their great cost, with the henceforth expected low price of grain.

The opinions which he had formed as to the useful connexion of science with practical agriculture were these:—science without practice could do but little; but science joined with practice would do a great deal. Science and practice now went hand in hand. Science now took its proper and useful position. It did not stand forward as an instructor to the practical farmer, but as his able assistant. With this union of science and practice, joined by the best exertions of tenant farmers and effectively supported by liberal landlords, and all engaged in agriculture, such general improvement in British agriculture may reasonably be expected as to place this country in that most desired situation for every country, the not being dependent on foreign nations for any part of its supply of food.”

We have quoted at considerable length the observations of Mr. Hillyard. We have done so, because every one who knows him highly respects him, and because the honest struggle between the old and the new schools was so admirably pourtrayed.

We pass on to the second dinner, and there we find an admirable elucidation of the advantage to be derived from meetings like these, and the true connexion between science and agriculture. Mr. Strutt, after some excellent prefatory observations with regard to the connexion between agriculture and manufactures, says “that there was another advantage of great importance which necessarily arose out of these meetings, and that was, that they tended to bring together men of science and practical farmers—and the labours of the agriculturist were aided and assisted by the discoveries and researches of scientific men. Until of late years science was considered to be totally unconnected with and unimportant to agriculture; but he was happy to say a change had taken place in the opinions of practical men on this subject. Chemistry, the use of which in bleaching and manufactures generally was fully estimated, was now found to be not so valueless as had been originally supposed when applied to agriculture. No better proof of the connexion between agriculture and manufactures could be afforded than by the immense and magnificent collection of implements which they had seen exhibited that day; a display of which any nation, and especially an agricultural country, has just reason to be proud. They

all knew how necessary were analyses of the soil, of manures, and of vegetables, in order to ascertain what were their constituent parts, what the best fertilizers for certain soils, and what the food best adapted to certain plants. The services of the geologist and of the chemist were pre-eminently useful and important to agriculture. Therefore it was that he thought they owed a debt of gratitude to those distinguished professors of science who had honoured them with their countenance and presence that day, and by whose labours they had so materially benefitted. The every-day farmer, and he whose time was fully occupied, could not be expected to attain to the knowledge of the scientific man. Others, again, who had devoted their time and labour to scientific observations and improvements had not the opportunity of carrying out practically those hints, ideas, and experiments, which they were able, however, to suggest and recommend. Through the medium of meetings of this kind and the pages of the Society's Transactions and journals, both were benefitted. Those able, enlightened, and wealthy agriculturists who had the opportunity, means, and leisure to carry into practical operation the experiments recommended, might confer the greatest benefits on their country by announcing the results of those experiments. He trusted that he had said enough to convince them of the advantages they had derived from the labours and studies of the men of science, the botanist, the physiologist, the chemist, and the geologist; and he felt sure the whole of the present company would drink with satisfaction the health of the professors of science.

Dr. BUCKLAND rose to respond to the toast, and said " he was sure that both the professors of science who were present, and those who were absent, would ever be ready to promote the interests of this great and useful society, and lend a helping hand to carry out the objects it had in view. They had lived in the present day to see a new epoch tried in the annals of agriculture and science in general. The agriculturists did not now, as of yore, turn a deaf ear to the suggestions of the men of science. They had been convinced by the beneficial results of a little capital and a moderate share of good sense, that the produce of the land, by judicious management, might be increased

tenfold. They were not now content to tread in the steps of their fathers and grandfathers, fearful of diverging beyond the line of path which had been followed for so many years. Improvements had taken place, by the union of science, in the arts, in manufactures, in navigation, and in the appliances of war. And why should not the same results follow from its application to agriculture? There was another important branch of science—that of the physiology of animals—and on this subject they had been enlightened by the important discoveries of Dr. Playfair, whose able lecture, published in the last number of their journal, had doubtless been read by most of them. The chemistry of agriculture was intimately interwoven with, and subsidiary to, the breeding of animals, and that important lecture on physiology was before them. In Dr. Playfair's presence he should better consult his feelings by not dwelling on his abilities than by any eulogy which, however merited, might offend. There was another eminent professor present—he alluded to Professor Owen, professor of comparative anatomy in the Royal College of Surgeons—an individual whose zeal and ability had been rewarded by the Government with a pension. He also, as a physiologist, was desirous to co-operate with the agriculturist, by recommending the scientific application of the most approved methods of rearing and fattening cattle. This was especially a time when they hungered and thirsted, as it were, for experiment, that farmers might know something of the nature of the component parts of some of their most common crops. The attention of the Society, therefore, could not be too speedily turned to this important subject. By a due attention to the admixture and transposition of soils, we shall find that we want not the aid of artificial and foreign manures, if the produce of the farm-yard is properly applied and husbanded; and if the constituents of our soils and their products are properly examined and understood by the labours of the chemist for the next five years, and of the geologist for the five years succeeding that, they will be enabled to point out with accuracy the constituent ingredients of which they are made up. He hoped yet to live to see the day when manure and good management would almost double or treble the produce of our soils: and by draining

and a proper course of crops, we should produce grain enough for the entire wants of the country."

THE CHAIRMAN then proceeded to the award of premiums for stock, and a noble list was read ; such an one had never before been exhibited at a meeting of the society. The short-horn bull of Mr. Barnard, of Halstead, to whom the first premium was awarded, was, in truth, a splendid animal.

The milking cows were a beautiful set of animals, although a gentleman said of them, that they would do better for the butcher than the pail : certainly they shewed the greatest disposition to fatten, and were excellently adapted for breeding a superior stock. A short-horned cow of Mr. Crofton, near Durham, carried off the prize here. The Herefords displayed some valuable stock. A bull belonging to Mr. Jeffries, of Penbridge, and a cow belonging to the same gentleman, were particularly admired. Their quiet aspect and heavy forms, and apparent aptitude to fatten, could not fail of pleasing the eye of the grazier, although in this dairy district they were not so great favourites as the short-horns.

There were comparatively few Devons exhibited. The first prize was awarded to Mr. G. Turner, of Barton, for a bull three years and three months old, bred by himself. The aptitude to fatten in these animals is very great ; so much so, that the symmetry of their form is marred by the masses of fat by which they are covered ; but their flesh is of the first quality. They fatten on comparatively little food, but are generally objected to on account of their light weight. This objection, however, is not well founded, if they produce meat of the best quality and at comparatively less cost.

Of the cross breeds there were few, and principally confined to the Burton-upon-Trent and Ashby districts.

At the head of the short-woolled sheep was Mr. Paulett, of Beeston, Mr. Jonas Webb, of Babraham, and Mr. Sainsbury, of West Levington. Mr. Edward Smith, of Charlbury, bore away the prizes for the best shearling ram, and the best ram of any age above two years old.

As for the agricultural horses, some of them were of improved

breeds, possessing muscular frames, and carrying little hair on their legs; but in general they were of no extraordinary value, with the exception of a cart-stallion belonging to Mr. Hutchinson, of Gedney. His head was small, but he had a remarkably fine powerful neck and shoulders, little hair on his legs, but full of bone, and as near perfection for this class of animals as possible. The first prize for thorough-bred stallions was awarded to Mr. Arthur Chester, of Nottingham.

The Duke of Richmond had hoped that some one who had carried off more premiums than himself would have responded to the toast. He was proud that he could take one premium, at least, into Sussex, and he doubted not that those farmers who presented themselves from widely different parts of the country would feel, like himself, pride and satisfaction in carrying home those honorary rewards which would tend to the credit and advantage of their respective counties. He made it a point to meet the farmers of England as often as he could; for, being himself one of them, he felt drawn to them by fellow feeling and common interest. He had some share, in connexion with his noble friend Lord Spencer, in setting this great association on foot, and he felt that, as long as it was supported by the practical farmers of England, it must continue to extend its influence and its usefulness.

The Chairman then proposed the health of Lord Northampton, the President of the Royal Society,—an institution that had been established for different scientific purposes, but whose objects had been carried out for the general weal, and whose labours had redounded to the honour and advantage of the country.

The Marquis of Northampton was gratified by the compliment they had been pleased to pay to him as President of the Royal Society. He shared with them fully in appreciating the importance of the exertions they were making to improve the science of agriculture, which was, as it were, the mother and hand-maid of all the arts. They were identified with every science and with every art; for what was the improvement of the soil but a branch of geology? What was the culture and growth of corn and roots and grass, but a branch of botany? What was the breeding and rearing of cattle, but a branch of zoology?

and what the application of various manures, the analyses of soils and vegetables, but a branch of chemistry? He appreciated to the full the value and importance of meetings such as these, which helped to remove all those feelings of petty jealousy which invariably existed in local districts, and excited a general and zealous desire to promote the welfare of the common cause by individual exertion. It had been well observed, that he was one of the greatest benefactors of his country who made two ears of corn grow where only one had grown before. He could not but feel that the Royal Agricultural Society of England was in some degree indebted for its origin to that Society over which he had the honour to preside; for if it had not been for the stimulus and example given to it by that and other scientific societies, it never would have arisen. If there had been no other geologists to encourage and appreciate his exertions, they would have had no Professor Buckland; and, but for similar examples, no Professor Owen in surgery, no Professor Playfair in chemistry. His Lordship concluded by wishing prosperity to the Royal Agricultural Society of England.

The Chairman felt in duty bound to congratulate the Society upon the noble show of implements of husbandry they had seen that day. He would venture to assert that, in the whole civilized world, there never before had been seen such an exhibition. Such a show of implements of exquisite workmanship, of wonderful ingenuity, and at remarkably low prices, was especially deserving of the notice and approbation of the agricultural world: and it was not a small degree of gratification to know that this fine display of implements had been exhibited in a manufacturing town like Derby, where they were so well able to appreciate their construction and advantages. It opened to them all a field of advantage never before known or properly understood in this country. It formed, as it were, a connecting link between those two great classes of the community; a fact so evident in itself, that it conveyed at once the idea of an union between them. He had heard it, however, remarked, that it was an exhibition fearful to the heart, and to the welfare of the labouring population. He believed, however, that, so far from this being the case, the opposite was the fact; for the improvement and progress of one fur-

thered and promoted the interests of the other. They could not impede the progress of science; it would master them—it would bear them down. How desirable, therefore, was it to direct it into proper channels, in order that it should accomplish those vast benefits which it was specially intended by the great Creator to carry out. Would any one venture to tell him that the use of the drill had reduced the employment of manual labour? or, who would affirm that the invention of threshing machines had impeded it? On the contrary, it gave employment to more numerous labourers. They were now enabled to thresh out their wheat in the barn more rapidly than ever—not by hand—not by horse power, but by machinery. To cite another instance—had the spinning jenny impeded the work of man? Had it not, on the contrary, given an increased impetus to trade, and to the employment of labour? If it were not so, how did it happen that they saw such great masses of people springing up in their manufacturing towns, and actively employed? They, indeed, occasionally heard of the want and misery of some of these men, who were thrown for a time out of employment; but how small was their number compared with those who were deriving their bread from the employment of spinning jennies, power loom machines, &c. He was convinced that it was utterly impossible to resist the onward march of science.

Mr. Ransom, after some introductory matter, with regard to the inconvenience and loss which he and his brethren had sustained from the strange misunderstanding that had arisen respecting the exhibition of their instruments, thus proceeded: “You have stated your high appreciation of the value and importance of mechanics as applied to agriculture, and you do not over-estimate these advantages as a means to the furtherance of the cause of agriculture. If we turn our eyes to the large manufacturing districts, and ask what has enabled us to maintain and employ the dense masses of their population, has it not been the result of the application of mechanics to the lessening of the hardship of labour, and reducing the cost of production? There yet remains a wide field in agriculture for increasing its prosperity from the same source—at once reducing the cost, and multiplying, and consequently cheapening, its production for the benefit of all. I am

aware that it has been frequently asserted that such improvements lessen the employments of the poor, and rob him of his birthright; but I have no hesitation in making the assertion, upon a more than commonly extended range of observation, that, with regard to agricultural machinery, I have never known an instance to the contrary but those who have most largely availed themselves of the advantages of machinery have invariably found their reward in the employment of a fuller complement of labourers to carry on other operations in the improvement of their means of production. Knowing this, I feel the value of my position as a manufacturer of agricultural implements, believing, as I do, that, through our means the cause of agriculture is advanced, the cost of production lessened, and the greatest benefit that can result to a nation—a ready supply of food for its people—is secured. Ours, gentlemen, is a proud position. Not only do we number among our ranks the humble and ingenious artisan and the experienced engineer,—not only have we as coadjutors men of science and practical skill, but our aristocracy itself has condescended to honour us by enlisting in our ranks. Gentlemen, you have established a grand national society for the encouragement of agriculture, and you have summoned us agricultural implement makers to come up to the help of the cause. Have we not to a man responded to the call? Have we not brought our implements from the north, from the south, from the east, and the west? Have we not braved for them perils by sea and perils by land, until, what with the delay and uncertainty occasioned by their transit by water, equalled only by the certainty of awful expenses by land—what with light carriages breaking down with implements which were too heavy, and heavy carriages jolting to pieces implements which were too light—after the suspense and anxiety attendant upon our getting them into your yard barely in time to be too late, we come to survey the idols, which at great cost of labour and of thought we had cherished as the means of our attaining the bubble reputation, and we find rents and patches, holes and fractures, far beyond the mysteries of paint and putty to cover or to hide. And what has been our reward? After encountering these evils, time after time, under the promise from your Society that their merits shall be ade-

quately and fairly tested, we do feel that we are entitled to expect at your hands full, fair, sufficient trials—trials which shall suffice, not simply to make amusement for a crowd, but which shall be a test of real worth. We come not to your meeting as showmen, to afford amusement: we come not here to sell our implements, as at a booth in a fair. We claim no greater degree of disinterestedness than other men; but we are all interested in the weal of the cause, and we come expecting that the Royal English Agricultural Society will justify the expectations they have held out, that our implements shall have a full, fair, adequate trial; that they shall be tested by practical and competent judges, aided by the intelligence of others skilled in mechanical combinations; and that, so tested, they shall have the stamp of value fixed where merit is due. This alone is the reward we seek. We value not your prizes of five pounds, and ten pounds, and twenty pounds. We value not your medals of silver or gold, if awarded merely on the ground of the novelty of their construction, or the intricate ingenuity of their arrangements. We bring you our instruments—we ask you to subject them to the sound or even severe test of practice and trial under competent judges; and when you do this, we shall highly value your awards—far, far above their nominal amount. If the decisions and awards of this Society are to have any value, they must be fair, full, and honest, and then they will be a permanent stamp of value and utility. Otherwise, they will be degraded to become the mere medium of puffing advertisement, enabling makers of implements to ride into notoriety on the back of the Society; and the agricultural public, who, misled under the apprehension of their value, purchase them on their faith in the Society's decisions, will be continually subjected to the mortification of finding themselves gulled and disappointed by their defective performances.

Earl Spencer begged to propose, to which there would not be a dissentient voice, "The judges of the cattle show." He bore his ready testimony to their care, zeal, and impartiality. He had been with them all day, and they had no easy task to perform in making their decision. On the morrow they would see such a show of cattle as had never before been exhibited at a meeting of their Society. It was not the conflicting merits but the over-

whelming number shewn that greatly increased the difficulties of the judges. The office was, in the best of times, a painful and responsible one, but much more so on an occasion such as this. With respect to the assistance they were deriving from the labours of men of science, he looked forward with confidence to much greater advantages for the future than what they had derived from the past. They would also learn to appreciate the immense advantages they were deriving from the improvement of agricultural implements ; and he would impress on them the paramount importance of affording trials and comparative tests to those agricultural implements.

Professor Owen was next called on by the Chairman. He said that he had come among them seeking for information, and little thought that he should have been called upon to address them. In attending one of their large meetings for the first time, he had done so in order to have the opportunity of carefully examining the anatomical configuration and peculiar qualities of those prize cattle of which they were so justly proud ; and in acquiring information of this nature he hoped to be able to give back somewhat of that knowledge to agriculture again. It had been sometimes asserted that prize animals were, from an exuberance of fat, in a morbid or diseased state ; but their power of accumulating flesh was one of the best proofs of health. In the tropical climates, Nature had wisely ordained that the ruminating animals should be endowed with the peculiar property of accumulating nourishment with rapidity ; and they were thus enabled, in the course of five months, to lay up a store in the lumps on their backs, that on which they had to subsist for the remaining seven months of the year. Agriculture was by no means of modern origin ; but it was only latterly that it had begun to discover how much the knowledge and practices of our fathers and forefathers in this art might be improved. He begged to propose “ Success to agriculture all over the world.”

Mr. Henry Colman, the agricultural commissioner for the State of Massachusetts, felt grateful for the welcome given to him, and the succession of kindnesses and hospitality received from Englishmen since his arrival in this country. He considered agriculture to be the art of all arts, the foundation of all wealth,

the great instrument of social improvement, and the conservator of public morals. Then, what could be more delightful as a recreation and source of interest, employment, and excitement, for the philosophical mind ?

No man could watch the growth of the seed or of the animal—could survey the ripening of his grain at harvest, or notice the manifold and wondrous operations of nature, without his soul, if he had a soul within him, being elevated in wonder and grateful awe to the beneficent Ruler of the universe. He came now to speak more immediately of the progress of agriculture in their own country, and in his country, for their country was his. Here had his ancestors lived, and here were their sepulchres, and he trusted that no miserable political feeling would ever again sever the bonds of interest and friendship which now united them. Belgium, they were told, had gone as far as any country in the march of agricultural improvement, by husbanding her resources, and looking to the composition and nurture of the soil. They would also readily admit that Germany had done something towards the common good ; for had she not furnished a Liebig, an agricultural chemist, whose works had kindled a flame throughout the agricultural world, which was daily shining brighter and brighter, and extending its radiance and usefulness over the whole world.

While, however, they were making all these improvements in implements, modes of culture, and the rearing of animals, he hoped they would not forget the labourers—those by whose means they were enabled to accumulate wealth, but would endeavour to improve their condition as much as possible. He congratulated them on the good understanding that subsisted between England and America ; and God forbid that either ocean or mountain, or, worse than that, any political distinctions, should sever them. America, he was happy to say, was now following the steps of her ancestor in improving her agriculture, and he hoped that a desire for improvement in that and every thing else, would be the only rivalry between them. Mr. Colman went on to cite several instances of agricultural enterprise and excellence among Americans, especially the desire of Washington to im-

prove the resources of his country, and concluded by proposing as a sentiment—"England, the sun of civilization ; may she long continue, like her own Eddystone, a light in the ocean. May her light shine, not to burn, but cherish—not to render the world desolate, but happy. May her energies be concentrated on those high objects—the diffusion of knowledge and the extension of civilization, liberty, and peace."

The Chairman next proposed the health of the members of the local committee, coupling with it the name of Mr. Charles Colville. Mr. Colville said that he should never cease to rejoice that he had been the means of procuring for the farmers of Derbyshire the splendid exhibition which they had witnessed.

The health of the President of the Society was then proposed by the Earl of Yarborough.

The Earl of Hardwicke replied, that he would not detain the meeting long, but he trusted he might be permitted to state that, in his opinion, agriculture would be best followed by adopting the practised rules of science ; but there was, in many places, quite enough to do to the land before science could be brought to bear upon it. He knew that, by proper cultivation, the produce of land might be doubled. He knew it by his own experience, because he had land which had doubled its produce in fifteen years. This had been mainly effected by dibbling, by deepening the ditches and draining the land, by using the straw of the farm-yard for manure, and, in fact, the farmers of England had as yet but little idea of what might be done by those simple means. If they but looked back for a few years, in what a wretched state did they find agriculture? The rich and the thinking—those who had the ability and the means—had, however, since come to its aid. He would call their attention to a work written one hundred years since, shewing that even then the application of science to agriculture was thought of.

The noble earl then read a passage from Mr. Pusey's paper, which spoke of agriculture as in itself a science, and as requiring the aid of chemistry to bring it to perfection. There was, it stated, one great obstacle to experiments in agriculture, that the time required to ascertain their results rendered them

most expensive, and there was much difficulty in finding a channel through which to give such results to the public; but the farmers of England had now that channel in the Royal Agricultural Society. It would enable them to communicate these facts to the world, a proof of which had been given in the volumes of its proceedings already published. He begged to remind his hearers of the fact, well stated by Mr. Pusey in the first number of their Journal, that by increasing the produce of wheat only one bushel an acre, they would add twenty-four millions of bushels to the food of the country. They should be careful in their selection of seed, and in their mode of making experiments. They had seen, in a recent number of the Society's Journal, a very extraordinary instance of the importance and difference of yields, arising from the selection of seed wheat? It was stated in a tabular form; from which he would, however, only read one or two extracts. The golden drop wheat produced 46 bushels per acre, fine Suffolk wheat 76 bushels, but another and more improved description had yielded 82 bushels per acre; and this was all from the same piece of land under the same treatment—the only difference consisting in the selection of seed.

This great society had been instituted for the benefit of the labouring classes as well as the wealthier classes of agriculturists. Mr. Colman, in his able and instructive speech, had feelingly alluded to that class of the agricultural population by whose exertions all the others were mainly supported. He hoped that he had not said any thing that evening inimical to the interests of the labouring classes; he wished to augment their domestic happiness, and to raise their social position.

Let not ambition mock their humble toil,
Their homely joys and destiny obscure;
Nor grandeur hear with a disdainful smile
The short but simple annals of the poor.

He hoped and trusted that the society would speedily turn its attention to the condition of the labouring classes. Already, in the short time in which it had been in existence, there had issued from its press various papers and essays fraught with advice and information to that class; and the society, he knew, was most

anxious to do all in its power to enlighten and improve their minds, as well as to better their condition.

This most interesting account of the Derby Agricultural Meeting, will be completed in our next number, when some observations that press painfully on our minds will be submitted to our readers.

Will our readers kindly communicate any observations that may occur to them respecting the present epidemic, or the altered character of that which continues to rage in so many parts of the kingdom. We do not refer to the disease of 1841-2, but to that which continues so awfully to prevail.

Any observations on the diseases, and general treatment of dogs, would likewise be most welcome, connected with the undertaking in which Mr. Youatt is now engaged.

ON THE ADMINISTRATION OF IODINE IN CASES OF DROPSY IN THE DOG.

By PROFESSOR DICK.

As you are engaged in preparing a work on dogs, I will mention a case which I intended to have sent you an account of at the time it occurred, but it escaped me. It shews the power, or rather a power, of iodine, which I think is not generally known, if known at all.

It was the case of a black and tan coloured retriever, which, in November last, was sent to me labouring under ascites. He was tapped, and two quarts of fluid abstracted. Tonics, combined with diuretics, were given, but the fluid continued to accumulate, and in three weeks he was again tapped, and another two quarts drawn away. The disease still went on; and in another two weeks a similar quantity again escaped.

Various remedies were tried to check the progress of the disease, but without effect, and the abdomen again became as much distended with the effused serum as before.

He was then put under a course of iodine, which soon began to shew its beneficial influence, by speedily allaying his ex-

cessive thirst ; and, in about a month, the whole of the effusion was absorbed, although, from the size of the abdomen, it must have amounted to a similar quantity to that drawn off on the three previous occasions. The dog's appetite speedily returned ; he gained flesh rapidly, and has continued quite well, and, from being a perfect skeleton, soon became overloaded with fat.

Induced by the great benefit derived in this case from the iodine, I took an opportunity of trying it again on the first case that occurred, which was of a Newfoundland dog that was affected in the same manner, and to about the same extent, as in the previous case. He was immediately put on a course of iodine, which was gradually increased. As absorption rapidly took place, the tumour was completely taken up ; but, partly in consequence of pushing the medicine too far, and partly from extensive disease of the liver, unfavourable symptoms took place, and he sunk rather unexpectedly. Still, however, from the obvious and decided advantage derived from the medicine, I have no doubt that iodine will be found one of the most efficacious remedies in dropsy in dogs.

ON SORE SHINS IN THE HORSE.

By Mr. E. A. FRIEND, Walsall.

IN THE VETERINARIAN for June there was a remarkably well-written article, on sore shins in the race-horse, by Mr. Atcherley, of Bridgenorth. In choosing this subject he has anticipated me in your pages, though I assure you this is no source of regret, as he has so well described the disease and attendant circumstances, as to leave me little more to do than to add a running commentary on his text.

This long-promised communication, together with the metacarpal and pastern bone of a half-bred mare, the subject of this disease, and which I trained and ran two years with variable success, I beg to offer for your acceptance, hoping the one will be found a complete illustration of the other.

Mr. Atcherley very properly commences his paper by alluding to the importance of the subject under consideration, both as it affects the owners and trainers of race-horses. Perhaps, in this light, one more important, less understood, or more baneful in its effects, could not have employed the pen of any veterinary writer, and Mr. Atcherley deserves great credit for the very energetic and luminous way in which he has brought it before the public. It is the first article on the subject I ever remember to have seen.

That it is not better understood, and its insidious attacks sooner and more effectually combatted, is owing, I am persuaded, to the want of confidence in the well-educated and practical veterinary surgeon, which is too often and too painfully felt, in connexion with those who have the management of this highly valuable species of property. There is a ridiculous affectation of secrecy and reserve among too many of the trainers of race-horses that ought not to extend itself to the professional man, whose interest, if fairly employed, would be firmly identified with their own; and I speak advisedly, and under strong conviction, when I say that, however much the training of these animals may have progressed as a matter of skill and good management—and I am happy to bear testimony to this as a fact—still, I am persuaded, it will never arrive at any thing like the degree of perfection it is capable of until there is an acknowledged and perfect identity of interest in the two to carry it into effect, and until every racing stable has its constantly attendant veterinary surgeon.

I have always been in the habit of considering those horses the most subject to this disease that in the technical language of the racing stable, go too much on the bones. It is essentially a disease of the bone and periosteum, as Mr. A. very justly observes in effect, although in other words. The weight thrown upon the shafts of support (the large metacarpal bones) aided by the intense velocity with which they are acted upon, and, as is almost invariably the case, upon bones that have not received their full maturity of growth, and, as I will venture to suggest, having a forced state of vascularity from the high state of keeping they are subject to during the time of training—these, superadded to the causes before stated, produce an inflammatory state of the periosteum and the extensor tendon. A morbid secretion of bone takes place of the healthy structure, spiculæ are formed on its anterior surface, and shortness in the action of the animal follows as a natural consequence of the laceration produced on these already painfully sensitive and suffering parts in the act of progressing. There is an anomaly in this disease, inasmuch as, although it is originally produced by too much weight being thrown upon the metacarpal bones, yet, in its progress, the animal invariably goes still more upon them, although this is easily accounted for by the laceration caused in the extension of the leg just stated above.

Sore shins, as a disease, is pretty well known to trainers from the action it produces in the animal, though I am quite convinced that few, if any, are aware of the fearful alteration in structure caused by it in its progress. A plaister, composed of an acid and an alkali, or some cooling lotion, is generally

applied to take out what they consider the soreness (a term embodying the same idea as soreness or stiffness of muscle from unusual or long-continued exertion), while the specific and destructive peculiarity of the disease is unknown and unattended to, and the loss of the animal as a race-horse is in too many instances the consequence. In the specimen now sent*, you will observe that the tendon in every extension of the fore leg had to pass over a substance about equal in smoothness to a nutmeg-grater; and, viewing this, you will not wonder at the observation of Mr. Atcherley, that, "in these circumstances, perfect extension of the limb is rendered almost impossible, and the slightest attempt in progression extremely painful."

Perhaps I need not apologize to your readers for again bringing the subject of Mr. Atcherley's paper before them; there is an importance in it that deserves the consideration of every one connected with the management of the race-horse; and though in an original article I might have said more, yet there is so much explicitness and proof of professional acquaintance with the subject in his paper, and I so fully concur in the views he has taken of it, that I should be quite satisfied with this attempt should it induce a re-perusal of that article.

ON THE TOBACCO ENEMA.

By Mr. THOMAS SMALL, Veterinary Establishment, Newry.

Gentlemen,—I READ with much pleasure and interest Mr. Percivall's communication, in your last number, on the salutary effects of the tobacco smoke enema, as it is a remedy which I have long held in high estimation. I first saw it used in India, as a means of restoring the drowned; and, in my own practice, I have known one case of tetanus (idiopathic), one of stomach staggers, and a host of cases of colic, recover, in which the tobacco enema was the principal remedy employed.

Mr. Percivall says truly, that "there are many among us who doubt the efficacy of the tobacco clyster." Many practitioners of my acquaintance are prejudiced against it, and cannot be prevailed on even to try it. My senior brother for many years treated it with the greatest contempt, without ever giving it a trial; but now, in his practice, he seldom uses any other clyster than the tobacco.

* We hope to be able to present our readers with a drawing of the specimen in our next number.

The very high authority of Mr. Percivall on this subject should now induce practitioners to try it; and I am satisfied they will find in it a powerful and valuable remedy for many cases that occur, both in horse and cattle practice.

MISCELLANEA.

A LONG FAST.

THE *Censeur de Lyons* gives the following remarkable fact in the physiology of animals:—

“On the 2d ult., a boy, in the employ of the miller at the village of Tarcieux, lost one of the flock of turkeys under his charge; and it was not found till the 5th instant, having remained the whole of the thirty days without food. The poor bird was discovered in a hole in the wall of part of the mill, into which it had got, and from which it could not afterwards emerge. It was lying with its head under its wing, in a sort of stupor. At the commencement of its fast, the turkey weighed between 110 and 120 ounces; but, when found, it was reduced to little more than feathers, skin, and bone, weighing not more than 21 ounces. It was not dead; and the miller, following the prescription of the *medecin malgré lui*, for mute girls and parroquets, administered to his bird small quantities of bread sopped in wine. After an hour the attenuated animal opened his eyes, and assumed an energy of motion like one in a state of intoxication; but has since become gradually better, and there is every appearance that it will soon be restored to perfect health.”

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LECTURES ON HORSES.

By WILLIAM PERCIVALL, M.R.C.S., *Veterinary Surgeon*
First Life Guards.

THE PROPORTIONS OF ECLIPSE.

I MUST confess I feel some surprise that no person since St. Bel's* time—none that I am aware of—has seriously taken up this subject: at least it must be admitted to be an interesting one; one, I think, that may be turned to some useful account; and I only wish it had fallen into better hands than mine. All who feel interested in the annals of racing, and in that science which makes us, on geometrical or mechanical principles, acquainted with “the form and action” of horses, cannot fail to seek with some eagerness what can be learnt about “the best horse” that ever lived; and every such person must feel a debt of gratitude to St. Bel for having, so far as he has, rescued the remains of Eclipse from oblivion, in having left us *data* concerning his shape and action, in number and nature sufficient to enable us at this distant day to infer what kind or description of a horse the paragon of racers must have been.

According to St. Bel's “geometrical table” of proportions, either there is something fundamentally erroneous in the standard of the French schools, or else Eclipse was, in his head or other parts, out of proportion. Considering that he stood sixteen and a half hands high, and that his head measured no more than twenty-two inches, we need feel no surprise that, while other horses, according to the scale, were but three heads length in height, he measured three

* How is the name of our venerable Professor to be spelt? Mr. Blaine asks (in his introduction to his fourth edition) “on what authority the late Professor's name is spelt *Sainbel*.” Mr. Blaine has a letter in his possession in which the Professor has distinctly signed himself “St. Bel.” At page 381, however, we still find “Sainbell:” a typographical error, no doubt.

and a half heads. I say this will account for his apparent out-of-proportioned tallness, but it will not account for his neck measuring thirty-three inches, or being equal to one and a half head's length. The regular proportion of the length of the neck being one head, we can in nowise account for the eleven inches in excess by supposing that the head was two or three or even four inches shorter than heads in general; and therefore the inevitable deduction is that Eclipse had a long neck, certainly a most desirable formation in a race-horse. His neck, as well as being *long*, was likewise well-proportioned; for it measured in width twenty-two inches at its junction with the shoulder; and yet was but a foot across at its union with the head, shewing how beautifully it must have tapered upward: whether it was of the *rainbow* shape, or was *straight*, is not quite evident.

The head of Eclipse must have partaken a good deal of the Arabian character; and no wonder, since, on the side of his dam, he is only the sixth remove from the pure Arabian: his dam being got by Regulus; his grandam by a full brother to Wildman's Squirrel; his great grandam by Lord Darcey's Montague; his great great grandam by Hautboy; his great, great, great grandam by Brimmer, son of the Oglethorp Arabian.

*Below** the eyes, St. Bel informs us, it measured, across, one foot; but from one eye to the other only seven inches; shewing that along with this extraordinary breadth of forehead his eyes were well placed, towards the centre of his head: points not only of utility, but of beauty likewise.

The breadth of the lower or posterior part of the neck (twenty-two inches), with the measure of the scapula, eighteen inches, and the largeness of the chest, are circumstances sufficient for us to come to the conclusion that Eclipse possessed *some depth of shoulder*; it was likewise *oblique*, for its angle of inclination amounted to 70° : in fact, all the fault St. Bel could find with the shoulder appears to have been, that it was "too much loaded;" a fault, if fault it be, that certainly denotes strength, and one which, I feel no doubt, many racing people would prefer to "a fine shoulder."

Eclipse's body measured, across its middle, twenty-six inches in depth, and the same in breadth; consequently he must have possessed "a circular barrel;" and his girth, around the *middle* of his body, at least, must have been—taking twenty-six inches for the diameter of the circle—seventy-eight inches; a circumstance which, unless we take it to have been that of the bare bones, or of

* This must be an error. The measure must have been taken *above* the eyes, from one orbital arch to the opposite.

a horse drawn or fallen away, certainly presents nothing extraordinary. There must have been a remarkable squareness about the body of Eclipse, inasmuch as lines running transversely from the withers to the stifle, and from the summit of the rump to the elbow, proved of equal lengths. What his actual girth was does not appear; but, according to the depth of his shoulders, it is evident he must have been deep in his chest, or let down in his brisket; and that his circularity of chest did not prevail in the fore parts, so as to throw his fore limbs wide apart, is certain, from the measurement of the interval between his arms being no more than seven inches.

The dip in Eclipse's back does not appear to have exceeded much two inches; it might, according to St. Bel's account, have been three inches; so that he could not have been a horse that "rose" much in his withers: his height was sixty-six inches, and he measured two heads and twenty parts, or sixty-four inches, in the middle of his back, just posterior to the place of dip; for which I allow (too much, perhaps) an inch, making the amount of dip, as I said before, at the very utmost, three inches. From the place of dip, the line of his back inclined (in a curve) upwards, rising at the summit-point of his quarters to one inch higher than he rose at the withers, from which it very gradually declined, but not with much incurvation, if any, to the tail. Eclipse, therefore, had a back roached rather towards the loins, but *straight* quarters, and, as we shall find, also *lengthy* quarters.

What we have to admire, as much, perhaps, as any points in Eclipse, is the length and breadth of his arms and thighs: he being, in the fullest sense of the words, a large-limbed horse. His arm measured, across, from the front to the point of the elbow, the surprising breadth of ten inches, and was longer by two inches than, according to the length of the entire limb, it is in horses in general; the measurement, by the scale, being equal between the elbow and bend of the knee, and the latter and the ground: immediately above the knee the arm measured five inches across, shewing that it preserved its great breadth all the way down.

For the relative lengths of the different parts of the fore limb, we must content ourselves with St. Bel's measurements of the bones. The radius was sixteen inches long, the cannon-bone twelve inches; the pastern, coronet, and coffin-bones, together, seven inches in length: from all which it seems, according to the measurement of other horses, we may infer that Eclipse had, with his long and broad arms, short cannons, and by no means lengthy pasterns.

There must have existed considerable harmony of proportion, and consequently beauty of form, in Eclipse's hind quarters. A

line extended from the summit of his rump proved the measure of another passing from the root of the tail to the stifle, to a second drawn between the latter point and the hock, and to a third from the hock to the toe of the hoof. The breadth of the thigh, "taken below the fold of the buttock," was great, ten inches; the same as the arm across at the elbow. Likewise there was great extension between the point of the hock and the bend of the ham, the measure being eight inches; shewing Eclipse must have been the possessor of extraordinarily broad or good hocks, a point of the very first importance in a racer. The cannons and pasterns measured, as is always the case, longer in the hind than in the fore limbs.

Eclipse's limbs were not only large, but long: he must have been what is called a "long-legged" horse; for St. Bel tells us, he measured forty-one inches from his elbow to the ground; leaving but twenty-five inches—his height being sixty-six—in a perpendicular line to the top of the withers; and as the general rule is, that horses should measure equal lengths from the fetlock to the elbow, and from the latter to the withers, if we subtract the length of the pasterns and foot, altogether, say nine or ten inches, or even a foot, we shall still have an excess of length of limb. After we have been told, however, that his chest measured twenty-six inches in diameter, there appears something rather irreconcilable with the statement that from the withers to the elbow is but twenty-five inches. It is not my desire to impugn St. Bel's "table," though I must say that in this, and one or two places besides, there appears some discordance in his admeasurements.

We may, however, I think, safely receive as matter of fact the following summary:—

Eclipse was "a big horse" in every sense of the words: he was tall in stature, lengthy in his body, and large in his limbs. For a big horse, his head was small, and partook of the Arabian character. His neck was unusually long. His shoulder was thick or strong, sufficiently oblique, but not remarkable for depth. His chest was circular. He rose very little in his withers, being higher behind than before. His back was lengthy, and over the loins roached. His quarters were straight, square, and lengthy. His limbs were long and broad, and his joints large: in particular his arms and thighs were lengthy and muscular, and his knees and hocks broad and well-formed.

That which, however, constituted, in St. Bel's eye, "the most beautiful and important quality of his structure" was the perpendicular lines drawn through his fore and hind limbs: indeed, so perfect were they, that "they may serve," adds St. Bel, "as rules in the choice of the best racers."

THE FIRST PERPENDICULAR falls from (what we call "the

point of the shoulder") the articulation of the humerus with the scapula, precisely upon the point of the toe.

THE SECOND falls from the upper part of the fore-arm or elbow to the heel of the fore foot, dividing in its course, longitudinally, the fore-arm, knee, and cannon.

St. Bel's third perpendicular is but a part of his second; and his fourth drops equidistant between the fore limbs. We, therefore, shall pass to

THE FIFTH, which falling from the point of the stifle, according to the regular scale, should come in contact with the toe of the hind foot, but in Eclipse struck the ground *half-a-head's length* (eleven inches) *in front of the hoof*.

THE SIXTH descends from the point of the hock, along the tendon of the hind leg, and, touching the heel of the fetlock, falls to the ground behind the heel of the hoof.

THE SEVENTH falls equidistant between the hind legs.

THE EIGHTH AND NINTH have reference to the body. One falls from the withers to the ground, touching the point of the elbow in its descent; the other from the middle of the back, through the body, to the central point of the quadrilateral figure described by the position of the four legs.

All these perpendiculars proved true in Eclipse; one alone differed from those of the approved scale, and this difference, we shall find, was attended with advantage: indeed, Eclipse's formation in this respect would appear to have corrected a grand error in the geometrical figure of the French schools.

In describing the differences between the proportions of Eclipse and those of the table of the French schools (which he reckoned to be five, viz. extraordinary height, both of head and body; extraordinary length of neck; the perpendicular from the stifle; and the greater length of arm) St. Bel omitted a very important difference, deducible from his own statements, which is, extraordinary length of limbs compared with the depth of body. St. Bel's admeasurements, as far as they go, have no doubt enabled us to make out what sort of a horse Eclipse was; but his mensuration might, in such a case as this, with much advantage have been carried a great deal farther—might, for example, in the instance of the limbs, included the circumferences of different parts, and, in many other parts, their relative span or thicknesses—also due allowances ought to have been made for the age and condition of his subject. He tells us, he "took the proportions of Eclipse while living, and satisfied his curiosity after his death upon his skeleton, by dissecting his body himself."

It may not be out of place, or unacceptable, to conclude this account of our prodigy of horse-flesh with the remarks that Eclipse

lived to the age of twenty-six, and died of "a violent cholic," on the 27th of February, 1789, at 7 o'clock, P. M.; and that, after a very minute post-mortem examination, St. Bel came to the conclusion that his death was owing to disease of the kidneys, combined with "violent inflammation of the bowels;" and found that his heart weighed fourteen pounds.

A CASE OF INJURY OF THE TAIL AND RECTUM BY A HARROW.

By Mr. W. A. CARTWRIGHT, V.S., Whitchurch, Salop.

ON the 9th December, 1842, a team of horses was harrowing, and, when turning round at one end of the field, the harrow was suddenly lifted up, and fell against the last horse's haunches, the animal giving way towards them, and falling with his hind quarters on them. One of the tangs ran into and through the root of the tail towards the rectum, and three others into the thighs. I bled him, and gave some aperient medicine, and ordered fomentations.

12th.—In consequence of the owner saying he would let me know how the horse went on, and other circumstances that clearly shewed that he did not wish my daily attendance, and also from a neighbour of his being on the spot and over-wise in the horse-doctoring line, and belonging to a class that are really pests to a district, I did not see the animal again until this day, when I found that there was a great deal of inflammation and swelling about the anus, and a difficulty in expelling the fæces. I raked him, and drew out a considerable quantity of dung, gave some oil in a drench, and ordered injections of oil, &c.

13th.—No better: treatment as before.

14th.—The swelling is much increased about the anus, and the discharge from the wounds is unhealthy and smells offensively. He eats scarcely any thing. The pulse is small and feeble, and the bowels not opened. I was obliged to rake him again, and drew out a good deal more dung. I then gave aloes $\mathfrak{z}\text{iv}$, and ammon. sesqui. carb. $\mathfrak{z}\text{ij}$, opii $\mathfrak{z}\text{ss}$, zingib. $\mathfrak{z}\text{ij}$, and ordered $\mathfrak{z}\text{j}$ of ammon. sesqui. carb., and zingib. $\mathfrak{z}\text{j}$; repeating it every three hours, and continuing the injections. His respiration is now materially increased. He does not express pain except when he is straining to void his dung. Never lies down.

Towards seven, P.M., he became uneasy and fell down. He continued to struggle until about eight, when he died.

Examination.—The wounds in his thighs had not injured any

material part, but they smelled offensively, and the parts around were approaching to mortification. The wound in his tail had not penetrated through the rectum, but that viscus had been injured, and it and the parts above it were enormously swollen with lymph and serum. The rectum, for at least two feet in length from the anus, was twelve inches in diameter. The omentum and peritoneum were highly inflamed, indeed I may say gorged with blood, but the peritoneum was worse on the sides of the abdomen and diaphragm than on the intestines. The food in the stomach and intestines was now pultaceous, and would have easily passed. The pleura covering the diaphragm was highly inflamed, and like the peritoneum on the sides. The lungs were healthy. A great deal of bloody serum was found in the abdomen.

This horse's death was caused by the disease in the rectum. His life, I am inclined to think, would have been saved had I been in daily attendance; but, owing to the indifference of the owner in not having him attended to, the bowels became constipated, and the fæces, being hard, increased the irritation about the rectum.

THE EXTRACTION OF A MAL-FORMED CALF, AND RUPTURE OF THE UTERUS.

By the same.

ABOUT the middle of the day on the 17th February, 1843, a valuable cow, six years old, exhibited approaching signs of parturition. Finding, towards three P.M., that she got no forwarder, the owner examined her, and ascertained that the presentation was a breech one, and that the hind legs extended down towards the udder, but that he was quite unable to raise them up into the passage. I was soon afterwards requested to examine her. On introducing my arm into the uterus, when she was in a standing position, I found that the presentation was as he had described it, but that the feet did not lie so low down as they usually do in such a presentation.

Extraction.—As I was not enabled by my hands alone to draw the legs into their proper situation, I passed a cord around the limb below the hock, brought the end so passed out of the body, and made a noose on it, and then passed the other end through the noose, and drew it nearly tight round the limb. I next forced the cord just above the claws, by which means a person was enabled to draw the lower part of the foot upwards, while I carefully guarded it to avoid injuring the uterus or vagina, during

which time I occasionally forced the hock and limb forwards. By these means both the legs were readily got into the passage.

I then used some considerable force, first to one limb and then to the other, so as to get them perfectly straight; but I found that neither the one nor the other gave way fairly at the stifle. I also examined the parts particularly, and found that the tail and breech were in their proper place. On examining the spine, I could detect a small cavity about the lumbar vertebræ, for which I could not account. I also thought there were some contractions about the whirlbone: of their exact nature I could not decide, but I thought all would give way on using a little extra force.

After three or four of us had been pulling at the legs, one of them gave way between the metatarsal bones and the tarsus, and, soon afterwards, the limb came off there. I then secured the cord around the lower part of the tibia, and it was well kept on by the projection of the os calcis. Soon after this the other limb broke in the same place as the first, but it did not come away. Seeing no other chance of getting it away than by force, I had greater assistance called in, and soon extracted it.

Examination of the fœtus.—It was soon discovered that the fœtus was a malformed one. The stifle joint lay forward, high up against the posterior ribs, and was held firmly there by the great contraction of the skin over the parts. The extensor muscles underneath were very much shortened. The tibia was also bent unusually backwards, as the os calcis came in contact almost with the back of the whirlbone joint. The muscles here were also in the same state of contraction and shortening as those attached to the patella, &c. The part of the limb below the hock was nearly in its natural position, being only a little more flexed upon the tibia than usual. The stifle and hock joints were also firmly held together in their altered position by the shortening of some and lengthening of others of the ligaments of the joints; and when the muscles were cut through, the joints could not be brought to their natural positions without rupturing some of these ligaments. Both hind legs were in this state.

Observations.—I never met with a fœtus malformed like the present. It is very probable that, had we known of the state of the parts, the best mode of procedure would have been to have separated the contractions of the muscles and skin with the knife, by which means the limbs would have been put into a straight position; but had the muscles and skin been cut through, there would have been a probability that the limb might have given way, and separated from the other parts of the body. Now, suppose even that this had taken place, and the limbs had separated at the whirlbone joints, a cord might have been fastened

around the body, and so extracted the foetus. As it was, when we pulled at the legs, the points of the stifle would be pressed and abutting against the sides of the pelvis in a square direction from the body. Some of those who were present afterwards said that had the calf been turned and extracted in its natural position it would have come away; but in answer to this, I may state that I was never enabled to feel the head or fore legs, consequently this was out of the question. Even had I been able to have got it in this position, I have no doubt that the stifles would have projected against the pelvis.

Lookers-on, at these times, are very ready to make their observations, and to give their opinions, saying "we should do this, and do the other, cut here and cut there;" but put their skill to the proof, and they are very soon silenced.

This cow went on very well until about the middle of the night, when she became very ill. Early on the following morning I was called to see her, when, finding that her uterus was ruptured, I wished her to be destroyed. She was, however, left alone all day without any thing being done, and at night she was killed. The neck of the uterus was found ruptured to a great extent.

CONSULTATIONS.

No. XXVIII.

ON THE WARRANTY OF A COW.

I TAKE the liberty to address you these few lines, soliciting your opinion on a case in which I am somewhat concerned, and which is at present pending before the sheriff.

In March last I was called to see a cow that had been bought two days previously. I found her with the vagina inverted and protruding as large as a man's head, and with violent uterine pains. I returned it into its proper place, after having carefully cleansed it. I bled the cow, and gave opiates, with oily laxatives, and cooling lotions to be applied to the external parts frequently, and raised her hind quarters. On the next day I found the symptoms a little abated. I repeated the medicine for several successive days with little advantage.

I suspected that there had been something wrong previously, owing to the apparent obstinacy of the case; and, on making inquiry, found that she had been affected with it for many months,

and this was eight or ten days before her expected time of calving. She continued affected in the same manner until her calving. At times she was most dreadfully harassed with pain: and the inversion of the vagina, taking place to a great extent, both when she was standing or lying, required attendance night and day to retain it in its proper place.

I advised my employer to endeavour to obtain a return of the cow to her former owner, which he did; but he was requested to retain her until he saw how she was after calving. He did so; and little was to be seen for some weeks, when the disease returned with its former violence, or even greater, and is still continuing. He then endeavoured to send her back again, but this was refused.

The case came before the Court yesterday, and the evidence produced proved satisfactorily that the cow had been in the state which I have described nine or twelve months previous to the sale. A difficulty existed in getting evidence to prove whether the case was such as would constitute a sufficient unsoundness to enforce her being returned. Ultimately the case was ordered to stand over until next court day, when it was to be more strictly inquired into. I, therefore, take the liberty of soliciting your opinion, which would have much weight in determining the matter.

To Professor Dick, Edinburgh.

Reply to the foregoing Letter, by PROFESSOR DICK.

Dear Sir,—In answer to your inquiries, I have to state that, in your part of the country, I understand in cow dealing, and even in horse dealing, the warranty or assurance, when any is given by the seller to the buyer, is, that the animal (horse or cow, as it may be) is "*fault free*." This, I think, is a very comprehensive term, and appears not only to include a warranty of soundness, which means freedom from disease or the seeds of disease, but also from every other fault, vice, or bad habit: and this kind of warranty, or any other kind of general warranty, has no reference to the degree or extent of the fault or disease, but is a guarantee that no fault or disease does exist at the time of sale. I am therefore surprised that any question should have arisen as to *the degree of the fault*. If, as you say, there is an inversion of the vagina as large as a person's head, and if it is a question whether that is a *sufficient fault*, it might still be a question when twice as much was protruded whether it was a sufficient fault; or, perhaps, even the whole of the uterus and vagina had

become inverted and was hanging at the animal's heels, and had been so previous to sale, it was to be considered *a sufficient fault* to return the cow—it would still be a question of *the degree of fault*.

In my opinion it is a sufficient fault to return the cow, provided she was warranted sound or fault-free. It is a diseased condition of the parts, not unattended with danger, and the cow must, therefore, be considered unsound, and is returnable upon the seller, provided she was either warranted sound or fault-free, or, what is the same thing, if she was sold for a sound price, viz. if she was sold for as much with the disease upon her as she would have brought without it, and provided the seller did not acquaint the buyer of her condition. The cow has been proved to be diseased at the time of sale: all disease must be held to constitute unsoundness, and she is, therefore, returnable. The disease may be mitigated or cured, but that does not alter the case. As the disease existed at the time of sale, she was diseased and unsound and, therefore, sufficiently faulty to be returned upon the seller.

No. XXIX.

A FATAL CASE OF PARTURITION.

Dear Sir,—I have a case just now of a fine cow after calving, with regard to which I should feel obliged by your advice. She was very uneasy, lay down and could not get up again. When raised she stood uneasy, lifting first a hind foot, then a fore one. I suspected abortion was taking place.

On the following day the symptoms were more decidedly marked. The throes were severe, and she was unable to rise.

Her labour pains having continued for some time, and getting stronger without any appearance of relief, I examined the uterus, and found considerable contraction, so much so, that but one finger could be introduced. I determined upon laying it open, and sent for another veterinary surgeon; and, after repeated and persevering manipulations, and proper assistance with ropes, we succeeded in extracting the calf.

I have given purgative, fever and sedative medicines. She had been bled previous to calving. She is a strong cow, but is unable to get up, and takes but a little food. That, however, which puzzles me is, that, during her pains previous to being

delivered, protrusion of the rectum took place, which we were unable to retain, and which rapidly assumed an intense red colour, and was much swelled. I have used fomentations, poultices, &c., and kept it in its place as well as I could. The throes of the cow have continued ever since; and I have given all that I could suggest to allay uterine pains, but which had no effect whatever; and it requires the constant attendance of one person to keep the rectum from protruding.

The placenta was extracted on the second day. She seemed racked with pain. What shall I do with the protruded rectum? and what course shall I adopt to allay uterine pains?

A Reply to the foregoing, by PROFESSOR DICK.

Dear Sir,—The continuation of the throes, straining, and labour pains, probably depends on some rupture from the previous violent action, or you may have wounded the peritoneum in your operation, and some of the ammonial fluid may have passed into the abdominal cavity, producing peritonitis, or otherwise inflammation has taken place at the neck of the uterus. It will be advisable to bleed again, as far as she will bear it, as indicated by the pulse, and a full dose of linseed oil and tincture of opium should be given, which may be repeated every eight or twelve hours until the bowels are acted on. The rectum must be cleared out by the hand, and washed out with a clyster; after which a glass or two of port wine and one or two ounces of tincture of opium should be injected into either the rectum or uterus, whichever may be protruded, and this may be repeated frequently until she is relieved. Raise her hind quarters well, in order to keep the bowels forward, and secure all by a proper bandage: I am afraid, however, that the case is a bad one.

The cow was dead before the Professor's answer could be received.

No. XXX.

A SUSPICIOUS DISCHARGE FROM THE NOSTRIL.

Sir,—I beg leave to consult you respecting two horses under my care, belonging to different farmers, with a discharge from the right nostril. I was called to one of them shortly after I came home from the College, in which it had begun about Martinmas last, but nearly disappeared for some time. The submaxillary gland

on the side affected is a little enlarged, and there is also a discharge from the eye. I inserted a seton along the gland, and blistered between the jaws, and also on the face. He got considerably better. I examined the teeth, but found nothing wrong. The discharge is very little, except when he is put to work, when it greatly increases, is of a white curdy appearance, and comes away in clots, with a fetid smell.

The other horse exhibits a very similar appearance, which leads me to think that there is an accumulation of matter in the sinuses.

I was thinking of opening one of the sinuses; but if you would prescribe any other treatment, or give me your opinion on the cases, you would greatly oblige me.

Reply to the foregoing Letter, by PROFESSOR DICK.

Dear Sir,—I think you are right as to the nature of the cases, and the best thing you can do, as the means you have used have failed, is to open either the frontal or maxillary sinus, and to wash out the nostril daily, or twice a-day, with tepid water for a few days, and afterwards to inject a weak solution of the sulphate of zinc until the discharge ceases.

Your's, &c.

ON THE PRESENT PLEURO-PNEUMONIC EPIZOOTIC AMONG CATTLE.

By Mr. JOHN BARLOW, V.S., Ould Farm, Manchester.

NEARLY twelve months ago I ventured to send you a few observations on what is termed the Present Distemper among Cattle, in anticipation, along with others of your correspondents, that the subject might engage that attention from the profession which its importance merits: with the exception, however, of a few remarks from Mr. J. M. Hales and another practitioner or two, our hopes have not been realized.

Observing in the present month's VETERINARIAN an editorial request for information on this head, also one from Mr. Relph, whose communications on cattle I have uniformly much pleasure in perusing, I shall offer no further apology for troubling you, as, since leaving the Edinburgh Veterinary College last spring, this affection has formed the bulk of my cattle practice, and I have at the present time a number of these cases under treatment.

I have not been able to ascertain whether this disease pre-

vails to any extent in any but Cheshire and one or two of the adjoining counties, where hundreds have been swept away: if such were the case, surely veterinary surgeons in various parts of the kingdom would, for the sake of mutual professional welfare, have recorded their experience therein in the monthly periodical. There may exist with some a fear that, were they to transmit their method of treating this affection to a periodical finding its way into the libraries of their employers, the tendency would be to lessen their professional emoluments: such might in some instances be the case; but on all whose patronage was worth possessing, the scientific account of a disease treacherous and varied in its attack—its symptoms varying with the extent and degree of an organ or organs implicated—requiring the utmost tact of the best qualified practitioner to discriminate, would impress the belief that he only could safely be consulted in such a situation who had been properly taught concerning the structure and uses of the parts implicated when in a state of health; who had carefully been taught to watch their invasion by disease imperceptible to ordinary observers, but appreciated by him in consequence of possessing, by means of the slightest pathological symptom, an index of what was passing in a part with whose healthy action and structure he is familiar; and, in addition to this, being well acquainted with the most effectual means, remedial and medicinal, for their relief. How far these indispensable requisitions can be fulfilled by persons who know nothing of the anatomy or physiology of their patients, the nature of the diseases they undertake to treat, or the action upon them of medicines of whose various uses and compositions they are ignorant, I leave those, whether owners of cattle or practitioners so called, to determine.

The suggestions of your correspondent Mr. J. Relph, as to whether it is not probable that the true seat of the disease now under consideration may have been overlooked, are worthy of the utmost consideration.

In many examinations which I have conducted the bowels certainly exhibited considerable disease, but not in any case that I am aware of, unless violent diarrhœa was present before death, which, however, is almost invariably the fact. Now, we are well aware that an important office exercised by the lungs is the exposure, in their substance, of blood, returned from all parts of the body charged with carbon, to the action of atmospheric oxygen, and a consequent throwing off of the carbonic acid, a return of which into the circulation would be injurious. We are also aware that the liver is concerned in separating carbon from the blood, which, combining with other matters, forms a secretion essential to

digestion. Now, taking these phenomena into consideration, my opinion with respect to the intestinal disease so often found in post-mortem examinations of this affection is, that when the lungs are deprived of the power of exercising their proper function on account of the extensive effusion of lymph into their substance, the biliary secretion, in order to throw off by another way the accumulating carbon, is increased, and the intestinal mucous membrane, stimulated inordinately, takes on an inflammatory action with its consequences. I mostly find this action existing in proportion to the impervious pulmonary tissue.

With regard to cerebral effusion, I must confess that it is only since this month's *VETERINARIAN*, came to hand that I have examined the brain with sufficient accuracy to offer any opinion. In one case, however, there was considerable vascularity of the choroid plexus, and more than the usual quantity of fluid in the ventricles. In another case nothing peculiar was observed. My researches shall, however, be more extended here, though I can scarcely conceive these appearances due to any other cause than a sympathetic participation of the cerebral cavities along with other serous surfaces, in the general disturbance. I have also seen the synovial membranes also implicated, which I know not how to account for otherwise.

The symptoms, as I previously stated, are at the outset somewhat obscure, but to the practical man sufficiently indicative of what is passing within. The first is a limited quantity of milk, then tenderness of the spine, with diminished appetite, and terminating with short, quick, catching breathing, and slight cough. The animal is unable to bear pressure or percussion on the costal regions, and flinches much if the trachea or lower parts of the throat are pinched. The pulse varies from 65 to 75, sometimes more, but seldom strong. These gradually increase in severity; but the usual indications of acute pleurisy or pneumonia are seldom developed, or, if so, the animal, under proper treatment, usually recovers.

The duration of these cases is various, from one to three weeks, at the expiration whereof the animal dies of what may be termed chronic asphyxia, the pulmonary tissue being occupied by lymph and a frothy mucus, or, what produces the same effect (if the pleura has been chiefly affected), effusion into the thoracic cavity.

In one case which I examined the lung occupying the right side weighed sixty-nine pounds, and I have often seen from sixty to seventy pounds of fluid taken from the chest. Now, although matters reach to this alarming extent, yet, as before noticed, the inflammatory symptoms are decidedly of a sub-acute character, at times almost disappearing, and never existing in any great in-

tensity. After the first two or three days, their effects become manifest in the beast being unable to continue long down—greater difficulty of breathing—the expiration accompanied by a grunt—absence of respiratory murmur in various parts of the lung—bronchial respiration round the margin of the hepatized or inundated parts—increasing prostration of strength—quickened but feeble pulse—decrease of animal temperature—torpidity of the nervous system, dysentery or diarrhœa, and the accompanying fever of a low typhous character.

By this time the pulmonary substance, incapacitated from performing its duties in the animal economy, and placed beyond the pale of vital action, is subjected to a chemical one. Decomposition takes place, and foetid effluvia are given off during the latter part of the beast's existence, which now speedily terminates.

With respect to the causes of this disease, I can say little. It has assumed an epizootic character, occurring in all situations and under all circumstances. Its first appearance in this part was in the neighbourhood of boggy land, and in woody localities, attacking more especially cattle recently brought into the country; but it soon extended its ravages, and now attacks them irrespectively, in all circumstances and situations.

With the post-mortem appearances you are already acquainted. Since last year I have seen cases wherein the heart was affected, and pericardic effusion had taken place; but, I am inclined to believe, in consequence of proximity to parts already diseased, and not primarily. Still the characteristic feature of this disease is, an early effusion of lymph into the pulmonary vesicular structure and bronchial tubes, as the termination or natural means of relieving inflammation existing in their parietes and parenchymatous tissue generally. There is also an effusion of water and lymph into the thoracic cavities, as the result of inflammation existing on their pleura; lymph, in most cases, forming a complete coating of great thickness to the costal and pulmonary surfaces, and also adhesions between the two almost throughout. Except the bronchial glands being occasionally in a state of suppuration, I have very seldom found any appearance of pus in this disease.

On reading the preceding account some might suppose, and perhaps justly, that these symptoms and post-mortem appearances indicate merely ordinary bronchitis, pneumony, or pleurisy, singly or combined, as the case may be. Should such, however, come to treat this affection in the way usually and successfully pursued in isolated cases of these diseases in horses and cattle, they will be, as I have been, from its almost invariable failure, induced to adopt another course.

The antiphlogistic treatment is certainly essential, to some extent; but here, from the short duration of the inflammatory stage, and its almost imperceptible sub-acute existence, the practitioner is mostly called in to treat the effects of what is considered by the owner the disease itself.

If, after dearly earned experience, the proprietor is wise enough to call in the veterinary surgeon on the earliest development of symptoms previously mentioned, he will generally obtain success as the result of his labours; but, on the contrary, if the practitioner is called in two or three days subsequent to the earliest attack, even though the symptoms are insufficient to create alarm to a non-professional man, the veterinary surgeon, from a minute examination of the respiratory apparatus, too often knows that the case will end in disappointment both to himself and employer; the latter, I am sorry to say, erroneously forming therefrom a mean opinion of the surgeon's skill, and this frequently operates against his future employment.

Without advocating any mode of treatment as the best, I will give a brief outline of what, after considerable trial, has proved with me of greatest utility; bearing in mind, throughout, as a matter of the greatest importance, the necessity of supporting the animal powers to the utmost degree consistent with safety.

In the first stages, those of congestion and inflammation, bleeding suggests itself as the most effectual and immediate means of relief that we can employ. Its extent will depend upon the case, always remembering the character of this disease, and its peculiarities. I have seldom found it needful to abstract more than from ten to twelve pounds at first; yet, sometimes, several repetitions may be necessary, although the united quantity is small. If the first bleeding was not employed before the third day, I have seldom found it justifiable to bleed at all.

As regards medicine in this stage, I would entirely discard digitalis and verat. alb., from the uncertainty of their effects—lying, as it were, for a time, inert, and subsequently operating when their action must be injurious. I am inclined to place considerable dependence upon hydrarg. submur. and potass. hydriod. throughout the whole course of the disease. In the present stage I usually give hydrarg. submur., potass. hydriod., pulv. ant. tart., pulv. opii, and potass. nit., in doses proportionate to the case, in linseed or castor oil, made into an emulsion with an egg or two, twice or thrice daily, until the bowels are acted upon by the oil, or so long as there is any thing to fear from the existing inflammation.

A powerful blistering liniment composed, for instance, of pulv. canthari., pulv. g. euphorb., terebinth. venet., pulv. ant. tart., and ol. lini, should be applied down the course of the trachea, and over the sides from the spine to the sternum. As blisters are sometimes ineffectual on the skin of cattle, scalding water or the actual cautery may be used. Setons may be inserted by those who prefer them.

In many cases perseverance in these means will, at the expiration of three or four days, find the inflammatory symptoms reduced without effusion. Notwithstanding all the practitioner can do, effusion into the pulmonary tissue or thorax will sometimes, or indeed often, occur. The treatment must then be accordingly modified. Potass. hydriod., hydrarg. submur., with tonics vegetable or mineral, diuretics, and stimulants must be largely given, even despite of some lingering inflammatory action. There is in cattle, under circumstances wherein stimulants would be absolutely poisonous to the horse, an idiosyncrasy frequently rendering their administration positively beneficial. The action of mercury renders it needful to be strictly watched, as death will inevitably occur if it is pushed beyond moderate bounds, for, after all, it does not seem very congenial to this class of our patients. The best mode of giving it is in small doses, or not much exceeding a scruple. Small doses often repeated will act more safely than larger ones, and with much better effect. To persons, however, acquainted with the nature and actions of these medicines, no cautions need be given, and other persons who employ them will most likely do so to their loss.

Notwithstanding the squills, asafœtida, and balsam of tolu have not much repute in the modern veterinary pharmacy, I really think that they are in some stages of this disease useful in conjunction with other remedies.

When the disease is once arrested, nature slowly restores the animal, in assisting which a course of mineral tonics is often of service.

CASE OF ENLARGED THYROID GLANDS IN A COW.

By Mr. W. H. COATES, V.S., Gainsborough.

HAVING observed several accounts in THE VETERINARIAN of enlarged thyroid glands in cattle, and the *modus operandi* of them, I am induced to give a short account of the treatment which I have adopted, and found most beneficial. Formerly I used frequently to remove them with the knife, but this practice

was always attended with great risk, from the hemorrhage of the neighbouring bloodvessels, and I have now entirely discontinued it.

These tumours are sometimes loosely attached to the subcutaneous cellular tissue, while at other times they are firm and indurated, pressing on the larynx, and causing stertorous and, not unfrequently, difficult respiration. That they are of a scirrhus nature there can, I think, be little doubt; although I have sometimes found, in the very centre of the gland, a small quantity of matter, not purulent, but of a caseous character. In the commencement it appears to cause little or no pain to the animal, but, in more advanced stages there is frequently very considerable pain.

My treatment is simple. It consists chiefly in the application of that potent drug iodine, or rather ung. hyd. biniodid. to the gland, and the administration at the same time of the hydriodate in small doses.

The case which I am about to describe is that of a valuable three-year-old roan cow, of the pure short horn breed, the property of Wm. Hutton, Esq., which was brought to me for examination. I heard her breathing very loud at a considerable distance, and, when hurried, she seemed quite exhausted. Saliva was drivelling from the mouth—she was very much out of condition, and had a calf which she then suckled.

I observed the enlarged gland at the posterior angle of the jaw filling up the entire space, and extending outwardly with considerable volume. The near side was indurated. Pressure on the part did not appear to produce pain, but only increased stertorous breathing. I was informed that she had always breathed hard from a calf, and that the enlargement had gradually increased. There was no apparent disease or malformation of the epiglottis.

My treatment in this case consisted in performing the operation of bronchotomy, and inserting a canula, which gave immediate relief to the breathing. I had the gland daily rubbed with ung. biniod. hydrarg.; and, in a fortnight, there was evident improvement of condition—the gland was a little reduced—and there was considerable vesication.

On plugging up the tube the breathing again became loud.

I continued the same treatment, and now gave small but gradually increasing doses of potass. hydriod.

In a fortnight more there was great amendment—the gland was gradually reducing, and the animal regaining condition and feeding well. I then discontinued the iodine, and ordered her to be turned out to graze. The canula having remained in another week, I removed it, and applied sutures to the wound, which healed quickly.

The breathing was now quite natural; the gland gradually sub-

sided to its proper size, and, in two months from my first seeing her, she was perfectly cured, and afterwards got fat. I have at the present time two similar cases in incipient stages, and both attended with stertorous breathing. They are both doing well, and belong to valuable breeds.

Query: Is this disease hereditary? I am inclined to think that it is.

ON THE DANGEROUS EFFECT OF SOOT THICKLY SPREAD ON THE GROUND.

By the same.

SOME little time ago I was sent for to make a post-mortem examination of some sheep. They were hogs in fair condition, and I was informed that they had been taken off turnips and turned on a field of luxuriant spring wheat. Ten were down—three dead—and seven paralyzed. The respiration was hurried—the ears and extremities cold—the pulse almost imperceptible—the bowels constipated—the fæces hard and dark-coloured—occasional struggling of the limbs, but no very evident pain.

Sectio cadaveris.—The intestines were free from disease, and rather flaccid—the aliment dark-coloured and covered with mucus. On examining the stomachs the rumen was found to be half full of dry impacted dark green food, studded over with small black specks, which on farther examination proved to be soot. The reticulum contained but little food. Its surface and papillæ were covered with black specks, and what food it contained was very dry. The abomasum and its ingesta were much darker than is natural. Its villous coat had a slight inflammatory blush, and the mucous secretion was quite black. The other viscera were apparently healthy. I did not examine the brain or spine.

On inquiry I found that these sheep had been turned on a field of spring wheat, which, only a short time before, had been manured with soot; and, no rain having fallen, or dew sufficient to enable the land or the vegetation to absorb this carbon, it had been taken up and swallowed by the sheep along with their food.

The remainder of those that were paralysed were destroyed: but all the others, to the number of three or four score, had cathartic medicine given to them until their bowels were well acted upon. They were then fed on linseed cake, and ultimately did well.

CASES OF COITION IN A MARE AFTER IMPREGNATION.

By Mr. J. M. HALES, V.S., Oswestry.

IN the June number of *THE VETERINARIAN*, there is a case of "Coition after Impregnation," reported by Mr. King, and which he considers to be an extraordinary circumstance, he having never before met with a well-authenticated case of it. It was my intention at the time to have stated that such facts had come under my observation, but various circumstances have delayed my doing so until now.

Three instances in which the male has been admitted by the mare after impregnation are now fresh in my memory, which will probably be sufficient to shew that it is not so extraordinary as it might appear to Mr. King to be.

The first case was a very favourite mare of my own, which I had used as a hack for several years, until continual battering on the road had worn out her fore legs. Being anxious to have a foal from her, she was put to the horse in the middle of April, and took him regularly every fortnight to the end of the season. Then, despairing of any produce, I gave her to a friend, with this condition, that, should she turn out to be pregnant by the horse to which I had sent her, the produce should be mine. As she still continued to be horsing, the gentleman who now had her allowed her to be covered at several different times by a half-bred horse in his neighbourhood. Finding this of no avail, and being determined to have something out of her if possible, she was submitted to a male ass.

In process of time, it became evident that the mare was in foal, and a question arose between my friend and myself, as to which of us the produce would belong; and we settled it in this manner, that, if the foal came to the time that it could be considered the legitimate progeny of the horse I had sent the mare to, it was to be mine; but if it came to that of the second horse, it was to be his. If she brought forth a mule, my claim was clearly destroyed. She, however, dropped a colt in the beginning of the following April, as near as may be eleven months from the second time she had the horse, and so like him, that no one could doubt the paternity. The period when this mare was covered by the donkey must have been in August, and at least three months after impregnation had taken place.

The second instance to which I allude was this:—a gentleman, at that time a resident in Oswestry, had a mare that he had hacked, hunted, and raced, and was desirous to breed from; he,

therefore, had her put to a thorough-bred stallion, then travelling through this town. Whenever she was taken to be tried, she admitted the horse throughout the whole of the season, until, at length, her owner lost all patience. Nevertheless, this mare foaled in due process to the first or second coition.

The third case may, perhaps, be thought more unusual than the others. The groom of a nobleman, then resident near this place, called one morning in my yard, leading in his hand a fine mare, which he said he was about to take to a horse ten miles distant. She had been running out the whole of the winter, and little notice had been taken of her appearance. The groom called on his return, and said that she had been covered. Six weeks or two months afterwards, the same person came in great surprise, to inform me that, on going to the field the first thing that morning, he found the mare with a newly-dropped foal at her foot. I laughingly said, it was the quickest affair of the sort that had come under my notice, but had no doubt a little inquiry would find a father for the colt, without saddling him on Hercules—the horse she was sent to. A slight examination established his descent, for he very strongly resembled a cart cob stallion, belonging to a neighbouring farmer, and which was kept in a field adjoining the one in which the mare had been running in the previous summer.

Two days ago I was at a friend's house—a large farmer—and particularly noticed a very fine cow in the yard. On expressing my praise of her appearance to the owner, he said, “Yes, she is a handsome cow, but she is always a bulling. She would have taken the bull last year up to a month of her calving.”

ON THE GOOD AND BAD POINTS OF CATTLE, AND ON THE FORMATION OF FAT AND MUSCLE.

By Mr. ROBERT READ, V.S., Crediton.

THE skin or external envelope in the ruminantia herbivora is an important feature in developing the disposition of cattle to fatten, and is of much import to the farmer and grazier.

A good skin is known by the familiar name of *touch*—that is, the animal should possess a mellow skin, with resiliency, moderately thick, yet loose and yielding to the fingers when gently elevated, and resuming its station with an elastic spring, as if there was underneath a tissue of wool impregnated with oil. The resilience of good skin in an animal depends on the organ-

ization beneath it and the presence or absence of cellular or adipose tissue. The existence of this membrane constitutes the good handler—its deficiency the reverse.

The pilary or hairy covering should be thick, not coarse; glossy and soft, with an inclination to yellow, and in proportion as this exists as a quality or constituent, so is the propensity to make fat: on the other hand, a thinness of hair and coarseness in fibre denotes an unthrifty animal, more especially if conjoined with a dense firm hide or skin, and with short hair. This implies a bad handler, and is a sure indication of being a slow feeder, with a tardy disposition to increase in volume, either of fat or muscle. It is by the feel of the cutaneous tissue that a judgment is formed as to the state of maturity now, and that an opinion be formed of the condition and worth hereafter. The beautiful mossy skin that seems like soft velvet, its peculiar feeling as if it were stretched over a bed of down when the fingers are applied and its easy resilience when traction is made use of, these are the best and surest prognostics as to the future worth of the animal.

Physiologically speaking, a mellow skin arises from a free circulation of the vascular system through the meshwork of the cellular or adipose tissue, or those cells that are destined for the reception of fat. These tissues are considered by some alike synonymous anatomically. They are always in a moist state, from the internal cavity of the cell performing the office of exhalation. Want or supply of interstitial deposit makes a bad or good skin.

The adipose and reticular tissues are extremely vascular, more especially that portion in immediate connexion lying under it. A good and kindly handler has a full development of this material well spread over the superficies of the external frame under the skin. The membranous tissue is a bed for the origin of the absorbents, and the adipose tissue is the depository in which the fat is deposited by the exhalents peculiar to it. These membranes participate in the character of the hide. They are more dense and inelastic, and less expansive. They do not admit of being so readily dilated by the interstitial deposit, and consequently are longer in acquiring a mature state in the progress of making fat.

A thick and unyielding hide, not succumbing to the internal deposit in the adipose tissue under the skin, is thus continually reacting by pressure on the absorbents, and in this manner makes the animal slow in accumulating fat on the external parts of the frame. The difference in the feel between the glossy and coarse haired animal is dependent on the secretion from the cutis. In the thick skin it is more inspissated, and exfoliates in branny scales. In the mellow and glossy skin it is more oleaginous,

which may also be accounted for. Its having a greater freedom for the assimilation of nitrogen—one of the compounds of ammonia—a chemical agent that is abundantly given off from the skin and uniting with the unctuous exudation of the cutis, gives to the skin that peculiar saponaceous feel, so necessary as the index of that organ performing its healthy functions, and may be ranked as a sure symbol of early maturity.

The ears should be of a fair proportion, not over large, thin in texture, and capable of free and quick motion. A good ear denotes good quality; a coarse ear, thick and large, is generally associated with much coarseness in the animal. A good ear is nearly always found in combination with a prominent and beaming eye, with thin palpebræ or eyelids.

This development of eye is most times in unison with a good and clean horn, tending to a very slight red at the radicals or roots. This indicates also a kindly disposition to early maturity. The happy and beaming eye of the healthy animal shews contentment, a very desirable omen as to the quick growth of the animal, while, on the contrary, a heavy eye with a want of vivacity, with thick eyelids, and a too visible conjunctiva or white of the eye, is indicative of an unhappy and restless temper, incompatible with a good and profitable feeder. The eye of contentment, of quietude, and of calm expression of countenance, is alone compatible with that temperament so conducive to accumulation of flesh and fat. These qualities, if derived hereditarily, will be maintained throughout the whole evolution of growth: they are, also, well known signs of early disposition to maturity. The hereditary principle should always be borne in mind. The old adage of "like will beget like"—whether applied to the symmetrical law of external form, of quality, of temper (either good or bad), of constitution, of a disposition to make either fat or muscle, or to any other cause inherently acquired. Therefore the only method to ensure those qualities which are so essential to the welfare of the farmer, is to commence primogenitively with the best and most approved principles that have hitherto been found to ensure a healthy and profitable stock.

I shall now speak of bone, as being the frame-work on which all the materials of the body are built. It should, when examined in the living animal, have the appearance of being fine and small in structure. It then augurs a good quality and being readily disposed to fatten, although it sometimes betrays too great a delicacy of constitution. A bone may be small from a consolidation of its structural parts, yet be capable of sustaining more weight, superincumbently, than bone of a larger size, and whose size depends only on the cellular expansion, and not on a cylin-

dric consolidation. A large bone maintains a coarse bred animal, a dull feeder, with a torpid vascular action, that only tardily irrigates the frame with the living stream. Such animals have a greater disposition to lay on more muscular than fatty substance.

Having concluded my observations on the external structure, relative to the propensity animals have of making fat, I shall now offer a few opinions on the arrangement of the internal organs for that purpose.

The lungs should be large, but not occupying the chest too much posteriorly; the chest capacious and deep anteriorly; these being the organs for preparing the arterial blood that nourishes every part.

I have also remarked, from inspection after death of hundreds of animals, that the roots of the lungs do not diminish in size so much as that portion which is in contact with the midriff in the fattening animal: lungs over large are not more productive of fat than those which are of a moderate size. My solution of this fact is, that if the lungs occupy too much of the chest in the posterior part, there is a limitation to the expansion of the rumen or first stomach, and the animal does not enjoy so much lengthened quietude in rumination, a circumstance very essential to the fattening beast. This substantiates what I have before stated. The chest cannot be too deep nor yet too broad in its anterior external conformation; therefore, instead of attributing the full, spreading, wide-ribbed chest, posteriorly, as instrumental to the lungs, the space for the expansion of the stomach must not be overlooked, a large digestive apparatus being required for all large herbivorous animals. The heart is an important organ in the animal frame. It is rarely found over large in the fat animal. It is the forcing pump by which the whole of the body is irrigated through the arterial tubes. If symmetrical organization pervades throughout the animal, the chances are that the vascular action will harmonize over every part, and the deposit of fat will equalize over the whole of the body. On the contrary, an animal with disproportionate parts will have a greater disposition to lay on muscle or fat on those parts respectively that have the greatest share of vascular action.

I am now proud to state some indisputable facts. I have many times examined animals by mediate auscultation, with capacious chests anteriorly, and the lungs duly inflating them. Previous to their being stall-fed, they have, when slaughtered, lungs small posteriorly. It is also certain that if an animal dies well the lungs will be found disproportionate to what they must have been in the living animal.

I do not agree with the generally received opinion, nor with Dr. Lyon Playfair, that the lungs must be of necessity small when an animal first begins to fatten; but, as the fattening process goes on, the internal cavity of the chest becomes smaller, the action of the heart weaker, and the lungs diminish in size in a regular gradation from various causes; first, from limited expansion; secondly, from absorption, and by pressure of the surrounding parts; and, lastly, from quietude never allowing their due inflation, which the act of depasturation affords.

The liver is also found small. This I consider to be from absorption and internal pressure of the surrounding organs. The liver has also a diminished supply of intestinal and mesenteric blood, from the appetite not being so vigorous, and less food being eaten, as the animal grows to maturity.

I have known many animals die from accident that, on inspection after death, have had large lungs and livers. They were in lean condition, but had every good quality for fattening; and I have no doubt would have made prime fat beasts, and whose lungs and livers, probably, would have been smaller when slaughtered.

I do think that Dr. Lyon Playfair is wrong in the opinion, that small lungs and livers are the best organs for the assimilation of food and fat. I think that the reason why animals become speedily fat in proportion as they approach maturity, is from the arterial action being slow, and the venous circulation impeded from the pressure of the accumulating fat. The arterial exhalents deposit more than the venous circulation can return, or their absorbents take up. Thus the harmony is broken. It is a fact well known, that very little blood of the venous kind can be taken from the fat animal. From what I have stated, taken collectively and in conjunction with the primeval external conformation of the animal, may be deducted those determinations which tend to either the formation of fat or muscle.

The tendency of certain articles of food to fatten stock, and the suitability of others to keep up the general growth, afford a fruitful field for inquiry. I shall begin with those that favour evolution of growth. A series of substances that are charged with albumen, or a vegetable gelatine, are nitrogenized in the maximum:—barley, oats, peas, and beans, form examples. These substances, having much nutritive matter, make the best food for the purpose of general growth, with the various herbivorous food for the young animal; but the more such food approximates lignin, the more insoluble and innutritious it is.

Herbivorous food for the young animal is naturally required, from its abounding with several elementary principles, as ammonia, &c., in unity with earthy matter; which, taken in with the

food in depasturing and uniting with the inherent formation of phosphoric and muriatic acid (and the phosphoric acid in the farinaceous food), form the phosphate and muriate of lime. Wheat, with the gelatine of the farina, constitutes the formation of bone; hence the necessity, or rather advantage, of supplying the growing animal with such a material.

The next series of substances are those which contain the saccharine principle, and are nitrogenized in the minimum. They are disposed to the formation of fat. They consist of the different sorts of bulbous or esculent roots, as turnips, mangel, beet, &c. These substances, when mixed with the nutritive matter of the farinacea, constitute the essential compound necessary for the production of fat and muscle in the animal body.

The table subjoined is one of equivalents by the celebrated chemist, Brande, shewing the relative quantity of albumen and other matter in leguminous and bulbous food.

100 Parts	Soluble Nutritive Matter	Starch	Vegetable Fibrine or Albumen	Saccharine Matter
Barley	92	75	10	7
Oats	75	60	13	2
Beans	80	52	25	3
Acorns, two } months dried }	69	40	27	2
Swede turnip .	$6\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$4\frac{1}{2}$
Common globe.	$4\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$3\frac{1}{2}$

This table is practically one of my own, as to the quantity of nutritive matter in the acorn. On reference to it, any one will quickly perceive those bodies which dispose to make fat or flesh: thus experience has shewn the decided advantage of giving to animals bulbous roots, with those substances rich in albumen, when they are preparing for the butcher, and when growth is requisite to be freely allowed to the young depasturing beast. Gelatine, a substance naturally abundant in the vegetable creation, is also a chief ingredient in the animal tissue.

The scientific agriculturist will discover the best method on reference to the table. As far as philosophy teaches, those substances that have the property either of forming fat or muscle are the azotized and non-azotised food in their relative proportions. The disposition of certain breeds to make fat internally, and of others externally, is a physiological fact, which can only be explained on the principle of those breeds acquiring such a disposition hereditarily, or it may be from the animal possessing such an aptitude from the method of feeding in conformity with the selection of food. Now the breed of the South Devons are coarse, bony, large animals, and not disposed to make fat on the

superficies of the body, but more internally: the North Devon is a small-boned and kindly animal, and disposed to fatten either externally or internally. A North Devon is a bad handler, with other points good: physiologically speaking, we should infer that fat would be deposited internally, from the skin being thick and inelastic, shewing the absence of those tissues that are for the reception of fat externally. Suppose we have a South-hammer, a good handler, with a mellow and plastic skin, and every other denotation of being disposed to fatten, the probability is that the fat would be deposited externally. In my humble opinion, it is so with every other breed. We must attend more to the external form and quality, in conjunction with locality, climate, and soil. Guernseys or Alderneys make fat but very indifferently externally. I well know practically, that an animal of either breed, with a good skin, and good bone, &c. is inclined to fatten on the outside; but when such is the case, there is an absence of it internally. The circulatory system, with the local form of an animal, may also be reckoned amongst those causes which tend to balance the fat indiscriminately either inside or out. Say that an animal kindly disposed to fatten has a few points that preponderate; for instance, he is large over the surloin—the bloodvessels, nerves, and muscles of such a part take on a corresponding size. When he begins to have more food given to him, the circulatory system becomes more full of blood, and, as a natural consequence, the larger parts have a greater influx of blood; thus the growth of these parts either in fat or muscle, and they become of larger proportions, and deposit more fat than those which are not commensurate in vascular action.

Before concluding these remarks, I beg to offer an opinion respecting small lungs, as stated by Dr. Lyon Playfair (at a meeting of the Council of the Royal Agricultural Society), that they are more favourable to the formation of fat. Dr. P. says, horses have large lungs. I well know, and not speculatively, that horses, if fed on meal and potatoes, or turnips, quickly and rapidly make fat. In fact, this is the compost that horse-dealers use to puff up the farmers' cattle, so as to give them a glossy and plump look previous to sale, and the being put to work in this state oftentimes causes their death. On opening them, I have seen them loaded with fat.

Now this is not in accordance with Dr. Playfair's views. My firm conviction is, that animals with small lungs in their growing state will in proportion suffer in their external form. From observations I have made on animals of divers breeds, I come to this conclusion, that they make fat internally or externally, regularly or irregularly, in accordance with the organization in struc-

tural arrangement, linked with those grand principles that modify the external conformation of every animal, locality, clime, and soil; and, lastly, the manner in which beans and acorns harden the flesh of animals. That they do so is an undisputed fact. The hardness of flesh or muscle depends on the richness of its lymph or fibrine. Beans and acorns contain large quantities of vegetable albumen compared with any other food given to horses or cattle. It is on this account that food which contains a large share of albuminous constituents, when given to horses, cattle, or pigs, makes them develop so great a degree of muscular firmness; but when substances rich in starch, mucilage, gum, or the saccharine principle, are added to beans or acorns, the hardness of the flesh becomes lessened, and the fat more emollient. I have practically proved this with horses. I have given beans and acorns to horses with hay chaff on the farm. The muscular power has been augmented; the flesh feels hard, they work well without fatigue; do not perspire, and, in fact, they are in full vigour. I have altered their diet, and given, instead of chaff, turnips, either the swede or common globe, and the effect is soon visible. The flesh becomes soft and puffy—little work excites perspiration—in fact, the animal is soon reduced from a state of good firm condition to one bordering on debility. From the taking away those substances, beans or acorns, which possess in a maximum degree the richest albumen, and the supplying those that contain it in the lowest degree, or minimum, the albuminous principle exists in several forms; and by it the living materiality of the animal body is by a law of animal chemistry built, under the guidance of immateriality.

COMPOUND FRACTURE OF THE JAW OF A HORSE.

IN looking over the *Sporting Magazine* of February, in the last year, we found the following case. It does great credit to Mr. Mavor. Why does not he, and others of his brethren, more frequently give publicity to a few of these cases, which do themselves and their profession so much credit?

On the 13th of October last, a favourite horse got loose in his stable, by pushing his head between the jamb and the door of the harness-room adjoining. The animal becoming alarmed, tried to draw back; but his head was completely fixed, and the more he struggled the tighter it became. The consequence was a frightful compound fracture of the lower jaw, which hung pendulous, while on the near side the fractured bone was forced into the

mouth. The owner sent him to Mr. Mavor, with directions to have him destroyed ; but Mr. Mavor thinking it possible to save the horse, immediately proceeded to set the jaw, and secured it with a leathern cradle, which, considering the difficulty of keeping the fractured ends in perfect apposition, was attended with much difficulty.

Considerable inflammation followed subjacent to the fracture ; various abscesses formed and burst, and there was extensive exfoliation of bone.

From the time the accident took place, and for five weeks, the constitution of the horse was supported entirely by thick gruel, composed of oatmeal, peameal, and bran. The animal having completely lost the power of taking the least nourishment, and being unable to swallow even water, the gruel was administered by gently raising the head by means of a pulley. A bucket containing the gruel was placed beneath, and, by the aid of the stomach-pump, conveyed into the pharynx. In this way nature was supported, but not without the greatest difficulty, as for many days the horse was so debilitated that he could hardly stand. He is now recovered, and gone to his usual work.

ON ROARING IN THE HORSE.

By Mr. T. G. WEBB, High-street, Whitechapel.

I FIND in my own practice, and in that of others, so few cases of roaring successfully treated that, perhaps, it will not be deemed presumption on my part if I send the account of one in which I have been fortunate.

The patient, a thorough-bred chestnut stallion, was considered to be entirely useless, on account of his being a confirmed roarer. The sound was occasionally so loud that his master was ashamed to be seen driving him, and requested me to do what I could with him.

Upon careful examination of him, the seat of disease seemed to be confined to the larynx. The treatment which I adopted was to have the compound iodine ointment well rubbed into the throat during three months.

I am glad to say that the roaring has entirely ceased. He is used in harness, and to ride ; and not the least noise can be heard.

A SUPPOSED REMEDY FOR GLANDERS.

By Mr. HENRY ROWCROFT, 4, Robert-street, Commercial-road.

I AM advised to lay before your special notice my having succeeded in a case of confirmed glanders; and I enclose you a copy of a testimonial or certificate given me on the day of my departure from St. Vincent, by Dr. Kennedy, nephew of Dr. Alex. Stewart, M.D., and Garrison Surgeon to the Forces in Ireland. These medical gentlemen resided together, and were my neighbours, in the year 1837, professionally and otherwise visiting myself and family, and became, consequently, acquainted with my having two glandered horses in my stables, and, perhaps, not a little interested, from its proximity to their own. The horse caught the disease from the mare described in the certificate, and, from its very low condition, and the cost, and expense of care, physic, and feeding in the West Indies, I was induced to have him shot; also from the farcy having broke out all over the horse, and that I might be enabled to pay more care and attention to the mare, supposed to be, from its symmetry, action, speed, and courage, the breed of the Arabian, introduced into Virginia, U. S. America. Accident favoured me, almost immediately after the death of the horse, with a remedy, which, applied and used locally and internally, effected a perfect cure of the disease, aided by other local and internal medicines.

The grey mare was originally purchased by a gentleman of property, Adam Skelly, out of a cargo, with a discharge from both nostrils; and afterwards by a groom, Frank Punnett, a supposed horse-doctor of great repute, who bled it from the jowl to the shoulder point; in fact, operated every way, to a great degree unsuccessfully. A Mr. Taylor, carpenter and cabinet-maker, then became owner, who, keeping the mare about one year, induced me (supposed to be better acquainted than any person there, and generally with most diseases of the horse—the eye, the foot, &c.) to exchange a Canadian pony, more useful to him, having a cart. So the mare was about two years glandered, and was when I purchased her a light grey, inclining to mouse colour, subsequently, on cure, becoming a beautiful dark iron grey. On coughing, lumps of congealed humour, and apparently tubercles, came from her lungs, very offensive, and the mucus generally which passed through the nostrils was often accompanied by small pieces of decayed bone, something in shape of a piece of quill, cut angular-wise from a goose quill, not dressed or pen made. A piece or two, one day, fell on my good lady's muslin gown when standing by, persuading me to give up all hope, and let the

mare alone. I may take the liberty to say, that Dr. Stewart was equally well acquainted with the diseased mare, and my having effected a cure. It was forbid to enter the garrison, under penalty of being shot; also from being attached to any place in the public street, when dismounted. These necessary threats only tended to double my care and researches; and I do maintain that an effectual remedy is now known to me: ready to operate when any favourable opportunity and patronage offers, either through the nobility, sportsmen, or large proprietors of horses; or through any professional gentleman who will favour me with his influence and introduction, on perfection of a cure.

P.S.—All parties can easily be referred to, and persons are in London from St. Vincent, knowing the mare as glandered, and cured by me.

CERTIFICATE.

I hereby certify, that HENRY ROWCROFT was my neighbour in St. Vincent, and had in his possession a grey mare which by the public was condemned for glanders; and Mr. Rowcroft effected a cure of the above disease by means of certain local applications aided by internal medicine, with which I am acquainted.

(Signed)

W. S. KENNEDY, Surgeon.

Saint Vincent,
28th May, 1843.

A true Copy, HENRY ROWCROFT.

[My reply to this letter received from Mr. Rowcroft was, that formerly I could have supplied the writer with plenty of cases of glanders; but that, nowadays, such cases were comparatively rare. Conceiving, however, that his object was publicity, I would obtain the admission of his letter, certificate, &c. into THE VETERINARIAN.—W. P.]

ON THE RECENT EPIDEMIC AMONG HORSES.

By Mr. THOS. MATHER, V.S., Edinburgh.

IN and around the vicinity of Edinburgh, the influenza or epidemic or epizootic disease has continued, for many months past, to prevail among horses with unabated fury, and with more or less fatality, assuming different diagnostic symptoms, according to the localities in which these animals were situated. At the present moment the cases appear to be more numerous, but of a milder character than at the beginning of this year and the conclusion of the last.

Beside these diseases of the lower animals, we have intermittent and typhoid fevers equally as prevalent in the human subject, and making extensive and fearful ravages among the inhabitants of this city, more especially in the families of the poorer classes of individuals.

It would be mere pretension on my part, and would give rise to a never-ending discussion, were I to endeavour to elucidate any theory, or throw out any conjectures as to the primary cause of so much existing disease affecting the animal body at this or any other particular time. There must certainly be something dependent on atmospheric influence in the production of the malady. I might allude, for instance, to the present summer; and even during the spring months, the weather has been very unpropitious, attended with cold, wet, easterly winds, during which cough, sore throat, and many chest affections predominated to a considerable extent, both in the horse and in man.

Notwithstanding the many plausible arguments and beautiful spun-out theories that have been described from the time of the ancient Italian physicians to the most scientific men of the present day, we are still left in the dark; and it is an intricate task to the most enlightened observer to unravel the cause of the greater proportion of the maladies that prevail. Nearly all, however, have agreed that they must be principally attributed to atmospheric agency; but as to the nature of that agency, strangely different opinions have been suggested. Theories that have no definite form, but vary with the changes of the season—bad ventilation—peculiar localities, constitution, and habits of different persons—all these are regarded as remote or predisposing causes. Some have been satisfied with affirming that the air which is breathed undergoes some change in the proportions of the gases of which it is composed, or is empoisoned by miasmata received from the earth; others attribute it to infectious vapours escaping from the bowels of the earth in various quarters of the globe during the convulsions of nature in volcanic eruptions.

I will endeavour to give a summary account of the influenza, as it has lately come under my observation. The influenza or epizootic in horses generally prevails, more or less, in the spring and autumnal months, owing to the vicissitudes of the season, and the animals at that period shedding their coat. This necessarily renders them weak in constitution, and more susceptible of taking on disease, especially in those organs otherwise more predisposed for an attack. The majority of practitioners, I believe, have nearly agreed that this formidable opponent assumes a typhoid or protean character, which, to a greater or less extent, is an inflammatory diathesis of one or more of the vital organs of the

animal frame, and partaking of different appearances, according to the parts affected. No wonder, then, that any specific remedy cannot be applied for its removal or amelioration; and that our therapeutical agents require to be modified, according to the symptoms exhibited in the different cases.

In some animals it merely attacks the mucous membrane of the nose and eyes, and appears in the form of simple catarrh. At other times, the inflammation finds its way through the cribriform plates of the ethmoidal bones, and proceeds towards the anterior lobes of the cerebrum, and exhibits symptoms of an attack upon that organ; while in others, it threatens the mucous membrane of the larynx and superior part of the trachea, giving rise to laryngitis, the effects of which are cough, sore throat, and a difficulty in swallowing the food, &c., not unfrequently abscesses forming in the submaxillary and parotideal spaces, giving it the nature of strangles.

Tracing it still farther, we find that, in some instances, it proceeds most rapidly, escaping the notice of superficial observers, to affect the same continuous mucous membrane in the lungs. In this stage it is denominated bronchitis. In other instances, it equally involves organs within the chest. Contiguous with the lungs, it spreads towards the pleura, a membrane of a different character, and being of a serous nature. The diagnostic marks then not unfrequently have a more unfavourable character, terminating in an effusion of water within the chest, under the name of hydrothorax, and finally, there is an affection of the heart and pericardium, terminating often in an effusion of serum within the membrane, and named hydrops pericardii.

In the late epidemic among cattle it assumed much of the same character, varying, however, in the different districts of the county, and according to the locality and the diversified exposures to contagion and infection.

Our worthy and talented Professor north of the Tweed describes it as consisting of an influenza or catarrh, with blisters on the nostrils, lips, tongue, and gums, and small pustular eruptions about the teats and the heels and interdigital spaces, attended by fever and quick pulse, with deranged appetite, and, in a few instances red-water making its appearance, evidently depending on some morbid state of the digestive apparatus. His treatment was changed according to the aspect and stage of the disease, an interesting description of which has appeared in your Journal.

Having taken this cursory survey of the disease, we proceed to a consideration of the treatment to be adopted. Although in some seasons of the year the malady is more prevalent and fatal than in others, yet all animals are liable to become subject

to its scourge, with few or more modifications in their different species.

During the present and bygone months of this year it made its appearance under a mild character, generally attacking the organs about the head, and requiring but little medical treatment. The first symptoms were a dull and languid state of the animal—hanging his head upon the manger—sore throat—coughing—slight difficulty in deglutition—watery discharge from the eyes and nose—the appetite, in some, impaired—others eating and drinking with avidity—the submaxillary and lymphatic glands enlarged—and the pulse accelerated. Some of the patients suffered very little from the disease, and in a day or two resumed their usual exercise, although not with so much spirit as when in health: in other instances it commenced with a disturbance of the respiration. There was fever—the pulse was increased to about 60 beats per minute, and very feeble—there was a peculiar drowsiness about the patient—the eyes half shut—shivering about the hind quarters—the extremities rather cold—troublesome cough—irritability of the larynx, especially when pressure was applied externally—the mouth hot, the appetite impaired, and the bowels constipated.

The secondary symptoms are, prostration of strength and staggering in the gait, which continues hanging about them for a considerable period afterwards. In the cases in which the inflammatory action was confined to the mucous membrane of the nose, the symptoms were more favourable, although the patient was languid for a day or two. The disease afterwards made its aspect in the form of a purulent discharge from the nostrils, or an abscess would form in the submaxillary or parotideal spaces; but these I consider to assume more of a specific catarrhal form than in the other cases, where more intense symptoms were exhibited. In the latter cases the treatment consisted in administering sulphate of copper, gentian, and camphor. Nourishing diet was ordered, and hand-walking in the forenoon of each day, until the patients recovered their wonted strength.

In those of the former the remedy was more prompt. The animals were kept upon warm bran mash, turned into a loose box, their throats rubbed with some liquid blister, and, when the pulse indicated it, the abstraction of blood, to the amount of about three quarts, was effected. They were allowed to drink freely of a decoction of linseed, and usually bark, aloes, antimonial powder, and nitre, were given. When the dung was softened I omitted the two former medicines, and continued the two latter, and found them to answer well. If debility supervened, I gave the mineral tonics, combined with pulv. gentian; I also gave

a little green meat, and continued gentle exercise daily, in order to recall the strength of my patient, and allow the parts to perform their natural functions. When the disease occurred during the conclusion of last year, and in the early part of this, it assumed a serious and complicated character, and proved in many instances fatal. The concomitant symptoms were rather peculiar, and the post-mortem examinations discovered extensive disease within the thoracic cavity.

The first form of the disease of which I shall treat was where bronchitis formed the type of the malady. It appeared in some instances to arise from or to be connected with uneasiness in the abdominal cavity, and colic was frequently present in the primary course of the disease. In other cases it appeared in the form of common catarrh. Perhaps there was slight cough, which was allowed to linger without attendance to it, as there was nothing apparently alarming in its nature; but, in a few hours, the case is altered, and the golden period for combating the disease will too often be passed away. It now manifests itself by more serious indications of the epizootic stage of bronchitis.

The symptoms in the early part of the disease are easily recognized by the experienced practitioner. The patient will, perhaps, be fidgetty, evincing marks of intestinal irritation; or, at other times, the disease will be ushered in by rigor, and, having had a previous attack of catarrh, he will be defective in his appetite as the disease advances; or there will be dulness and disinclination to move about; the pulse feeble and accelerated, ranging between 60 and 70 beats per minute; a bounding action at the head, while at the jaw the action in the artery is scarcely perceptible; the respiration quick and laborious, accompanied with a mucous râle or rattle; the mucous membrane of the nose injected; the countenance betraying anxiety; occasional discharge from the nostrils; the mouth hot and dry; the animal searching about in the loose box to obtain as much fresh air as possible; the extremities moderately warm; the bowels rather constipated. This is succeeded in two or three days by a rapid prostration of strength. If he is led about, he will stagger and reel. The cough is now very painful, but the pathognomonic symptoms require to be carefully watched. Nothing but close attendance and skilful treatment will give us any chance of success; although slight and simple in its attack at the first, yet its unsubduable termination in bronchitis often baffles the most experienced practitioner.

The remedies to be employed require to be varied according to the stage of the disease. It has been tried by different persons with nauseants, sedatives, tonics, stimulants, blood-letting, and

counter-irritation. Lately the preparations of mercury have been used, and have succeeded very well. The disease is of an inflammatory nature; yet we must not think that we can always subdue it by powerful depletion or blood-letting. We must suit this to the state in which we find the strength and action of the vascular and nervous systems.

In a former paper on this subject, I alluded to a suggestion of the heart and its investing membrane participating in this influenza, in a case where the animal had an abnormal action in this organ, arising from his being repeatedly attacked by the epidemic. If I was correct in this suggestion of the nature of the disease, it will not be wondered that our treatment is as complicated and uncertain as are the symptoms and continuance of its character.

In pursuing the treatment of this bronchitic form of the disease, it was varied according to the nature of the cases. In those in which I was called upon in the first stage, and before it had commenced its deceptive and rapid strides, indicating the appearance of the irritation in the intestinal tube to which I have alluded, I administered linseed oil, tincture of opium, with spt. nit. ether; and I was often enabled to allay the irritation of the disease and the colicky symptoms. With regard to the after-treatment, it required a little discrimination. The best criterion was the state of the pulse and the strength of the patient. In the acute and primitive stage of the disease, the inflammatory action running high, I abstracted blood to the amount of about five quarts, keeping my fingers on the pulse, so as to warn me of the proper time for closing the orifice. In some instances patients could not bear the loss of more than three quarts, which evidently shews the necessity of attending to this silent monitor. A second bleeding is sometimes necessary, but this depends upon circumstances, more especially if the patient is in good condition, and can withstand with safety its abstraction. I ordered my patients to be put into a well ventilated loose box, and to be warmly clothed, in order to encourage a diaphoretic effect. Enemas were thrown up, and the legs were bandaged. In respect to feeding it consisted in warm bran mash, and a little green food when that could be procured.

The medicinal remedies consisted, first, in giving Barb. aloes, antimonial powder, and nitre. This I adopted in order to relieve the bowels, and bring the contents into a pulsatious mass. The throat was rubbed with lin. ammon. and tereb. If there is no amendment on the following day, and the dung is in a hardened condition, I repeat the medicine; and instead of the antimonial, administer the chloride of mercury with gum opii, and repeat the enemata in the interval. On the third or fourth day I give

the chloride of mercury, with double the quantity of opium, morning and evening, taking care to watch the action of the former, and omit the latter, when the bowels are inclining to be constipated. This latter state is relieved by linseed oil and clysters. I have usually found this treatment to succeed; it requires, however, a little more attention to the action of the medicine. I next, if necessary, set up counter-irritation on the sides and breast, by blistering the former, and introducing a rowel in the latter. The bowels should be kept in order by mucilaginous drinks, such as linseed tea, or water gruel, &c.

If the disease assumes a favourable aspect on the fifth or sixth day, or towards the eighth, then diminish the repetition of the medicine. When prostration of strength occurs, I support the patient by nourishing diet, &c.; and administer the mineral tonics, combined with a little gentian powder.

When it terminates in resolution, it generally leaves behind it a chronic cough, which must be treated accordingly.

This is my laconic but clinical plan of treatment: but when the pleura both of the lungs and chest become inflamed, the symptoms indicate measures more vigorous and decisive. If the inflammation extends from the lungs to these membranes, then the diagnostic marks are altered. Instead of the quick feeble pulse there is a full and bounding one, or in some patients a hard and wiry one. A full and free abstraction of blood is then necessary, and in this type of the disease we must bleed repeatedly, until we change the character of the pulse. In this case an aperient is deemed advisable, with alteratives in the after-treatment.

If the disease should terminate in hydrothorax (or an effusion in the chest), then depletive remedies would probably increase the disease, and destroy life. If there is no affection of the heart, sedatives, such as digitalis, or even antimonial powder and nitrat. potass. with tonics, is useful, to which I have had recourse; and when this does not succeed, paracentesis thoracis, as a last resource, is adopted, but which I never had an opportunity (in any of my cases) of trying.

Having traced the disease thus far in its progress, I shall point out another organ but too often affected, either combined or uncombined, with the other organs attacked, viz. the heart and its capsule; and on which practitioners have not bestowed sufficient attention, or have overlooked it altogether. In a former part of this paper it was mentioned that in some instances of the disease the heart was full and bounding in its action, although at the radial and submaxillary arteries it would be quick, feeble, and irregular. In such patients the treatment must be modified in proportion as this organ is more or less affected. I could not ab-

tract blood, nor administer purgatives, sedatives, narcotics, nor establish any counter-irritation, as this is rather adding fuel to the fire, and debilitating an organ which is already weakened by disease, and which ought rather to be supported, in order that it may carry on its proper functions in the circulatory process. The nervous system having the controul over the vascular one, all medicinal remedies employed operate indirectly upon this organ; and the consequence of so depressing nervous energy all of us know without any comment on the subject. If we increase the action of it by chemical agents, depression, as a consequence, follows, with all its bad effects.

It is an involuntary muscle for propelling the vital fluid through all the different parts of the body, which serves for the purpose of nutrition and secretion. When the main organ is therefore impeded in its action, from whatever cause, the inquiry will naturally arise, what remedies can be employed in counteracting so deeply-seated and important a part in the animal economy. Should the disease then manifest itself in the type under which I have viewed it, it is evident that other symptoms will arise independent of the peculiarity in the action of the heart and arteries. Accordingly we find a greater prostration of strength; the animal is dull, and his eyelids pendulous over his eyes; his head resting on the manger; disinclination to move; appetite diminished; dropsical swellings in various parts of the body; suppressed secretion of urine, &c. Towards the latter stage of the disease the hinder extremities fail, and paralysis of them takes place; all the functions in the body are depressed; the swelling increases until the animal drops and is unable to rise again; and then death puts an end to his miserable existence.

The treatment must be prompt and decisive, as it soon bids defiance to all our pharmaceutical agents. The attempt must be made to arouse the dormant state of the constitution and the strength of the patient: all other things are useless. The best means that I have had experience of, and which I can rely upon as an effectual remedy, are powerful stimulants combined with tonics, such as a half bottle of sound porter or ale every two or three hours, combined with some of the mineral tonics, as sulphate of iron or the carbonate of ammonia; and, in order to excite the action of the urinary organs to produce absorption of these dropsical effusions, spirit of nitrous ether diluted with water, or in the porter, is beneficial, and also puncturing the swellings with a lancet. Digitalis, although an excellent diuretic, has too much of a sedative effect.

Allow the animals to get plenty of nourishing diet, such as boiled barley, or a few raw potatoes, or greens of any kind, when

they can be procured; allow also plenty of warm clothing, and bandage up the extremities.

The post-mortem examinations of the cases that have proved fatal are as follow:—In the abdominal cavity nothing particular could be exhibited connected with the alimentary canal, except a few petechial spots on the external surface of the tube. The liver presented a morbid hue, being quite hepatized, and easily lacerated; in some there was an effusion of serum within the cavity. The kidneys were large, and displayed the effects of inflammation. The bladder was perfectly healthy, and generally found empty: extensive patches of extravasated blood and serum were underneath the iliacus and psoæ muscles; and this effusion continued through the whole course of the crural and sciatic nerves, as they proceeded from that portion of the spinal marrow to their termination among the different muscles.

In examining this cavity of the body, all the organs participated more or less in a morbid condition. The substance of the lungs in some cases was evidently abnormal; the bronchial tubes suffered in proportion to the extent of the disease in them, being very much injected, and full of frothy mucus. Effusion of serum to a greater or less extent appeared, and adhesion betwixt the pleura pulmonalis and costalis. Connected with the heart and pericardium, there was effusion within the membrane, consisting of bloody serum. The external surface was of a purple colour, and very much thickened in its coats, arising from a deposition of coagulated lymph during the active stage of the inflammation.

The heart, in one or two instances, was much enlarged, and its colour changed from its natural pink to a dark purple, with numerous spots of ecchymosis on its external and internal surface, and changed from its natural structure to a hepatized one; in fact, it had lost that firm dense muscular feeling which it previously possessed.

If I have been correct in my description of the progress and termination of this disease, I conceive it as more or less a disease of the heart and its surrounding membrane, and also connected with the organs of respiration.

There are still more convincing proofs to be adduced in corroboration of my opinion. I may refer to many cases of this influenza that occurred in the neighbourhood of Liverpool during the last year, and which came under the observation of Mr. George Kirkham, V.S., residing in that town; who, in an essay read before the Veterinary Medical Association of Edinburgh in January last, described a few cases that passed under his notice, shewing that this affection of the heart and pericardium predominated in those cases to a greater or less extent.

In confirmation of such, when the 14th Dragoon Guards were stationed at Piershill Barracks a few years ago, this type of the epidemic appeared, and this organ participated in the attack. In a few cases that occurred, primitively depleting remedies were tried, but were found to be prejudicial to the disease. If a quart or two of blood was withdrawn the animal began to faint, and exhibited symptoms of collapse, and it was with difficulty that the orifice could be pinned up.

Professor Dick being consulted on these cases, observed, that by giving the affected animals diffusible stimulants a complete recovery was effected.

From what we have seen, then, of the nature of the influenza, how much care does it not demand from practitioners in giving their diagnosis; and how great is the importance of auscultating this, the fountain-head of the circulation, before prescribing a remedy of, possibly, a totally different kind to that which the appearance of the disease indicates. He must be decisive in his practice before he can expect a favourable prognosis of the different cases that came under his notice.

Having completed my transient review of the knowledge and treatment of this complicated disease among horses, much yet requires to be done. There is ample scope for a working mind to throw more light upon the subject; and I hope that practitioners north and south of the Tweed will not lose sight of it.

EFFECTS OF MEDICINE ON HORSES.

By Mr. W. PERCIVALL, Veterinary Surgeon to the First Life Guards.

FERRUM—IRON.

WHILE our forges are ringing with the clang of iron in the manufacture of horseshoes, few veterinary pharmacies are without the metal in some form or other, it being found useful as a remedy for certain states of disease, and for debilitated conditions of body. Like the other metals, in its pure mineral state it appears to be ineffective; it readily, however, oxydizes both within and without the body, and in that form exerts some influence, mild though it be, on the animal constitution. Forge water, as it is called—the water from the trough of the forge in which the heated horseshoes are cooled—strongly impregnated as it is with iron, may be regarded as a powerful chalybeate, and was in former days not infrequently exhibited as a medicine to horses:

I have myself administered it by way of a tonic, but I have no recollection of having noticed any particular benefit derivable from it. Of the preparations of iron, that in most common use in veterinary medicine is

THE SULPHATE OF IRON, or *Green Vitriol*, as it is often called, or *Copperas*. It has for years enjoyed among us a high character as a tonic; and though, perhaps, of late years it has been less used than formerly, it still constitutes the basis of the *tonic mass* of most of the old practitioners.

With a view of testing the efficacy of green vitriol in glanders, and, at the same time, of ascertaining its general effects on the constitution, the following experiment was made:—

CASE I.—On the 2d May, 1821, a brown horse was admitted into the infirmary at Woolwich for acute glanders. The horse was taken from a stable in which another, since destroyed for the same disease, had stood; and two other horses of the same proprietor a day or two afterwards exhibited suspicious symptoms. The subject of the present experiment is in good condition, of middle age, and assumes every aspect of health, putting the disease out of the (local) question. The submaxillary glands of the near side have grown, altogether, as large as a hen's egg; the membrane upon the correspondent side of the septum has that red and glistening appearance which betokens the approach of ulceration; indeed, when the light can be made to shew the upper part of the septum, an ulcer of a square form and healthy aspect is distinctly visible. The discharge from the affected nostril is of an aqueous character.

May 3d.—Let him take, morning and evening,

Ferri sulphat.
Potass. subcarb. āā ʒss.
Theriacæ q. s.

4th.—A pimple appears upon the lower part of the septum, having a yellow point and transparent aspect. Repeat ball morning and evening.

5th.—Nasal discharge becoming mucous, with some flaky purulent matter. Continue ball.

6th.—Let him take his ball thrice a-day.

7th.—Two small foul ulcers have formed upon the ala nasi. His dung has become of an unusually dark colour, and is voided in small balls, leading us to believe that the iron is somewhat constringing his bowels.

8th.—No alteration. Continue ball.

9th, 10th, 11th.—Let him take two balls morning and evening: being two ounces of the vitriol daily.

12th.—The pimple has disappeared, leaving incipient ulceration. The other ulcers have become improved in appearance.

13th, 14th, 15th.—Continued his balls as before.

16th.—More discharge from the nose than there has hitherto been. Let him take three balls morning and evening—three ounces of the salt daily; and apply some liquid blister to the enlarged glands.

17th.—He hangs his head, is depressed in spirits, and eats nothing: he appears nauseated by the medicine. Discontinue medicine.

18th.—The pulse, which yesterday was hardly perceptible, has got up, is now 65, and strong; and there is an appearance of irritability and startlishness about him.

19th.—The disease in the nose has exhibited much aggravation within the last four-and-twenty hours. Fresh ulceration has supervened, and the discharges are more profuse and purulent in character.

22d.—It is of no use recurring to the iron again; for the symptoms have been growing worse ever since it came into operation. Transfusion was attempted on an ass six months old, but the experiment failed.

23d.—The horse was destroyed by inflation into the jugular vein.

THE VETERINARIAN, SEPTEMBER 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

WE take a rapid survey of the proceedings of the last day's festival of the Royal Agricultural Society at Derby, the Earl of Hardwick presiding.

The Duke of Cleveland, being called upon by the Chairman, assured the meeting that from his youth upward he had taken an interest in agricultural proceedings, not because he was a land-owner, but because he felt that the interests of agriculture, and its prosperity, were of the highest importance to the welfare of the community at large. He proposed, most sincerely and heartily, "Success to the Royal Agricultural Society."

The Chairman next proposed the health of Mr. Everett, the

minister from the United States of America. He represented a people progressing in the march of power and opulence in a manner astounding to the other nations of the world—a people that must for ever be esteemed by us as brethren, notwithstanding any temporary difference of opinion, and that, united with us in feeling and affection, might defy the powers of the whole world. He had no doubt that the two countries would progress together in the arts of science and of peace.

Mr. Everett would ever entertain the kindest feeling for the land of his forefathers. Attached as he was to his native country, he never forgot that his ancestors were the companions of those whom he now addressed. The sound of his native language beyond the sea was music to his ear; and he believed that if one thousandth part of the energy, and skill, and treasure that had been expended by rival nations in the struggles of what was called the field, had been expended in a generous emulation to excel in the arts of peace, the farmers would very soon drive the diplomatists off the stage. The amount of commerce between Great Britain and America was two-fold more than between any other people, and it was his ardent wish that it might long continue so to be.

Lord Morpeth then rose. The toast he had to propose was “AGRICULTURE,” and deep and unfeigned was his respect for all that pertained to it. Its principles are honourable—invigorating and benevolent—dating from the very birth of time—growing with the progress of civilization, advancing with the advance of light and knowledge and indispensable to the public welfare and the national greatness. To agriculture we must add manufactures, for they have assisted us in attaining the height of prosperity and influence to which we have arrived. “It has,” said he, “been no common gratification to me to have had the privilege of attending a meeting like this; looking, as I do, at the materials of which it is composed, the spirit by which it is conducted, and the object it seeks to obtain. It has been brought together through no motive of party excitement, or to swell the progress of any popular movement. Its purposes are purely and simply patriotic. It places side by side goodly examples of the honest faces of the yeomanry, with some of the brightest specimens of

the ancient aristocracy. Agriculture, manufactures, and commerce—these tend to unite the scattered branches of the human family, to join nation and nation, clime and clime, man and man in one cemented bond. They soften the asperities of international jealousies, and calm the savage tendencies to strife and to murderous war.

Lord Hatherton said, that the sentiment he had to propose embraced in two words the primary and important object of this meeting, the union of practice with science. It afforded the practical farmer the opportunity which he so much desired, of meeting those scientific instructors to whose lessons they were so much indebted. The mechanist, the chemist, the geologist, the botanist, the hydraulic engineer, the meteorologist, all in their several departments contributed much to the advancement and prosperity of agriculture. He referred, in especial terms, to the benefits derived from the labours of men like Professors Playfair, Buckland, Henslow, and Daubeny.

Professor Playfair observed, that it was not to be expected that the accumulated experience of centuries could derive great immediate advantage from its connexion with science; but, ultimately, all would be realized that was expected and promised. Practice must, for some period, lead Science by the hand, and not permit her to part company until she has trimmed her lamp, and thrown a radiant light on the treasured stores of information she had accumulated, and taught us how to turn them to lasting advantage. It may, perhaps, be long before science would overtake their practice, or the great mass of facts that had been accumulated be thoroughly weighed and sifted. It may likewise be true, that many of the theories of learned men are somewhat vague and useless; but, nevertheless, these theories are the leaves of the tree of science—the means of affording nutriment to the limbs and to the trunk, and of circulating the healthy current of the sap throughout the whole system; and even when they fell to the ground they were not entirely useless, for they served to fertilize and to shade it.

Several appropriate toasts were afterwards proposed and drunk. The reply of the noble chairman to the proposition of his health did him the highest credit. He stated that all doubt of the

success of the Society was scattered to the winds. The rapid increase of its members—the indissoluble bond by which they seemed to be united—the publication of its Journal, all gave assurance of its success. There was no excitement at their meetings, no topics of agitation, no politics; but they assembled for a most benevolent and christian purpose,—that of increasing the means and capabilities of providing food for mankind. The artizan and the manufacturer, the soldier and the man of science, all were dependent for their daily bread on the cultivator of the soil. England was one great farm, the inhabitants of which were mutually connected with each other; and, therefore, it was desirable that those who had the means of carrying out improvement should unite with those who had the will and ability to perform it.

The Highland and Agricultural Society of Scotland was then proposed, with the health of the Duke of Richmond. He assured them that meetings like these afforded him one of the greatest pleasures of his life, and he believed them to be of the greatest importance to the country at large. He begged to propose a toast, to which there was no man who called himself a farmer who would not respond, for it was their interest as well as their duty to promote the welfare of the class of men to whom he alluded,—“The Labourers of England.” When agriculture prospered, the agricultural labourer would also prosper.

The Royal Agricultural Society of Ireland was then proposed, and the toast was responded to by the Marquis of Downshire, who said that, in speaking of Irish matters, he might seem to tread on tender ground, but he had nothing here to do with political differences. He wished only to speak of the fertility of the soil, its great capabilities, and the blessings which Providence had showered upon it; and he hoped that no public event might impede the great national object which the Irish Agricultural Society had in view.

The health of Earl Spencer, the father of the Society and their future President, was then drunk with enthusiasm, and the meeting shortly afterwards broke up.

The history of the Agricultural Meeting at Derby is given somewhat at length, principally on account of the new character which that meeting assumed. It was not only the usual show of

cattle and horses and sheep and swine; not only an exhibition of instruments, beautiful and useful in the highest degree, but it assumed a scientific character, the remembrance and the benefit of which will not soon pass away. It was a new epoch in the annals of agriculture and general science. The labours of the agriculturist promised to be usefully mingled with the discoveries of scientific men. The names of Buckland, and Owen, and Playfair, will not be soon forgotten, whether we regard general science, or the application of it to that new branch of philosophy connected with our manufactures and with agriculture.

Another important branch of science is beginning to be unfolded, or, if it was not new to us, it was but little understood—the physiology of our domestic animals—the scientific application of the most approved methods of rearing and fattening our cattle, and the means by which their diseases may be mitigated or averted. This latter point was at Derby strangely passed over in utter silence. An epidemic is now fearfully raging among our cattle. It is altogether different from that which prevailed two years ago—as different as light from darkness. Was one word said about it? Was the difference of its character, the cause of its appearance, the proper mode of treatment, discussed or even alluded to? Did no one hint how murderous in the new complaint must be the medicaments that were so strangely foisted on the public three or four years ago? Did no one speak of the paramount necessity of suiting the treatment to the nature of the malady, instead of ignorantly and murderously applying it to every case? Was there no veterinary surgeon present at these meetings?—Was there no *professor of veterinary medicine* who might have stood forward and explained the nature of this fearful malady, and pointed out the proper mode of cure? “Hundreds of cattle,” says Mr. Barlow, “are now swept away in Cheshire and the adjoining counties;” and the writer of this can say, that fully as many are now lost in the neighbourhood of the metropolis.

The epidemic among horses, as recorded by Mr. Mather, is another fearful and neglected subject of inquiry. The Derby meeting should not have passed away without these fearful topics being thoroughly inquired into. With these drawbacks, and they are such, and deserving the strictest inquiry, we regard these meetings as highly important and valuable. Y.

A CASE OF POISONING BY MEANS OF SEA-SALT.

By M. HELIES, Bergarac.

ONE morning in the month of May, 1833, M. B. drove two bulls to the fair of Villemblard, and in order to give them an illusory appearance of being good feeders, a quality which one of the two was far from possessing, he had fed them with every thing that he thought would promote their appetite; but seeing that neither of them throve much, and that he could not obtain from either that roundness of carcass which is so desirable in these animals, he gave to the one that throve the least a solution of five handfuls of salt in four pounds of water. His object was in this manœuvre to produce an ardent thirst, that would constrain him to swallow a great quantity of water, and thus produce an appearance of condition which he could not obtain by any other means. This proceeding seemed to be crowned with complete success, for during a journey of two leagues and a half to the fair he drank of every pond of water to which he came near.

On his arrival, his evil star would not permit the owner to sell his cattle, however anxious he might be to effect it. It was necessary to drive them home again.

On the following morning, the one who had been so abominably drugged was evidently very ill, and was attended during four days by the village cow-leech. At length, beginning to despair, he requested me to see the animal.

From the violent heaving of the flanks, and the burning heat of the mouth, and the drooping of the eyelids, and the smallness of the pulse, and, in fact, the rapid exhaustion of the animal, I judged that he was in a desperate situation, and near his end: in fact, he died on the following morning, and I was not permitted to make any post-mortem examination.

In the month of June, in the same year, a farmer of Maurens pursued the same foolish course, and I was not sent for until all hope of saving the animal had fled.

On my arrival I found the animal presenting the same symptoms as the others, and I did not hesitate at once to give an unfavourable opinion. I promised, nevertheless, to return on the succeeding day, if it was only to examine the carcass; but early in the morning a messenger arrived, who informed me that he died on the preceding evening, and was interred immediately after its death. I thus lost the second opportunity of ascertaining what were the organs principally affected by this singular disease.

On the 3d of April, 1839, I was officially employed to super-

intend the general state of the cattle in the Canton, and went to visit two oxen that had been bought on the preceding evening at the fair of Mompazier. I found one of them already dead, and the other in the following state: heaving at the flanks—the muzzle dry—the mouth hot and spumy—the urine great in quantity, and frequent; and the animal standing fixed in one posture.

The proprietor told me that in the evening, after having bought and paid for the beasts, he began to drive them to their new habitation; that during the whole of the journey they appeared to be in an excited state, which, without giving him much alarm, yet did not appear to be natural. At every pond of water which they passed they eagerly plunged into it, and gorged themselves to a strange extent. Having reached their new home, some dry food was offered to them, but they refused to take any: some water being placed before them, they eagerly drank of it three or four times. They seemed to be strangely altered in their appearance, but this was placed to the account of the fatigue of the journey.

His astonishment was great when, on entering the cow-house on the following morning, he found one of the beasts dead, and the other exceedingly ill. He immediately suspected that salt had been administered to them, for he knew that it was a dangerous and often fatal custom to make the cattle swallow a greater or less quantity of salt before they were sent away to the fair. For my part, recollecting what I had formerly seen, I was very much disposed to be of his opinion. I ordered milk and oleaginous drinks to be given to the remaining animal, and which restored it to health in the space of fifteen days.

In opening the abdomen of the other, I found nearly eight quarts of citron-coloured fluid in this cavity. The paunch was distended with extremely fœtid gas, and contained an extraordinary quantity of food, composed of various dry substances, crushed potatoes, turnips in the same state, and green and dry acorns. Neither of the divisions of the stomach exhibited any appearance of inflammation.

The intestines presented, here and there, some streaks of blood, and principally in a portion of the jejunum. The liver and gall-bladder were almost of a healthy character, except that the first was somewhat discoloured.

The kidneys were equally discoloured.

The bladder contained a small quantity of urine, and was starred interiorly with streaks of blood.

The thorax contained nearly ten pounds of a serous fluid; but the lungs were in a normal state.

The heart was surrounded by a serous fluid, which filled the

whole of the pericardic cavity, and which, instead of presenting its ordinary colour and consistence, was of a pale ash colour, and seemed to have undergone a kind of decomposition, so soft and little tenacious was its tissue become.

The middle membrane of the arterial trunks was likewise discoloured, as was easily ascertained by cutting through the one within it.

These latter lesions, in connexion with the fulness of the paunch, appeared to me quite sufficient to cause death, and the approach of night scarcely permitted me to enter into any examination of the cerebro-spinal system. This, added to the difficulty of procuring instruments and assistants, compelled me, however unwillingly, to abandon this portion of the examination.

In the mean time, since no one lesion appeared to betray the existence of any chronic disease, it remained for us to endeavour to discover the immediate cause of this unforeseen death. Was it indigestion? The state of repletion in which we found the paunch appeared to me to favour this supposition. Was it a case of poisoning by marine salt, as the antecedent and the actual state of the animal would seem to indicate?—and, supposing this latter to have been the cause, might it not have also determined the second, with which it was complicated?

In order to remove as much as possible the doubt on this point, which might during a legal examination have given rise to a host of objections more or less well founded, I filled a bottle with the fluid in which the alimentary mass was floating, and begged M. Delpit, chemist in Beaumont, to filtrate a portion of it, and then proceed to test it by hydro-chlorate of silver, which immediately produced a white, flaky, insoluble precipitate, that, in our opinion, proved the existence of salt in solution in the fluid. This circumstance was stated in my account of the matter, and the bottle containing the fluid which I had taken from the paunch was corked and sealed, and deposited with the magistrate, in order that the court might, if they pleased, repeat the experiment, and obtain new and perhaps more conclusive results than those arising from the investigations of M. Delpit and myself.

M. Scot, before entering on the action which he intended bringing against the other parties, took the advice of some of the most eminent advocates in Bergerac, who were all unanimous in advising him to desist from his demand, stating that, first, the proofs of the supposed poisoning were not sufficiently established for a court to be enabled to proceed on them in a regular way; and, secondly, that although the animal had died of indigestion, and this indigestion could only arise from the fault of the seller, there was no ground for annulling the sale, seeing that this case

is not provided for by any of the dispositions of the law of the 20th May, 1838.

How far were the opinions of these advocates valid? This is a point I will not attempt to discuss; but what I should wish to discover is, how this fact is to be accounted for, namely, that the salt left no sensible trace of its procedure through the first passages, but that the whole of its action seems to have been expended on the circulatory system, as is proved by the state in which the heart was found on the post-mortem examination, now in question, and probably also in the two beforementioned cases, since all the most striking symptoms were observable in the chest.

Journal Vet. du Midi.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from page 415.]

SCURF USUALLY MISTAKEN FOR THE MANGE.

PREVIOUS to my describing the last complaint, I ought to have introduced "the scurf," or what is generally called the mange or itch. This state is very frequently the forerunner of the former, and also, like the former, is evidently a dangerous disease, assuming the name of one of the most obstinate and malignant the animal is subject to; viz. the mange, which is scarcely ever cured, although much attention has been paid to it.

This scurf I have almost invariably found to disappear on giving the animal the exciting and subsequent cordial balls as recommended in the last kind of ulcers. Exercise is also proper, and the scurf may be washed once a-day with the solution of corrosive sublimate, as recommended for the ulcers. If this is not found sufficiently strong, four or five ounces of turpentine may be added. After this solution has been employed two or three weeks, it may be left off, as the hair frequently will not grow until the solution is discontinued.

If the animal is in very high condition, a dose or two of physic will be proper previous to the balls.

I have observed in this country, that horses in very high condition will frequently have eruptions or scurf, covered with small watery pimples, occasioning moisture or discharge. In a case of this kind, which was under my direction, the subject was a very valuable Arabian, in high condition, and the complaint had

existed for many months—I believe upwards of a year. Saline applications had been employed, and the disease increased. I ordered a solution of one drachm of blue vitriol in a pint of water to wash the parts two or three times a-day. At the same time two or three doses of physic were given, of one ounce of aloes and two drachms of calomel each. The animal in consequence discharged an immense quantity of gravel and sand, perhaps to the weight of twelve or fourteen pounds; and after ten or twelve days, the parts were perfectly dry, and the hair again appeared. I heard, some months afterwards, that the cure was complete. In this case I suspect the poverty of blood proceeded from the lacteals (which convey the nourishment from the bowels into the system) being obstructed with the gravel and sand that had accumulated from the animal's eating the grass unwashed.

POLL-EVIL.

There is an ulcer to which the animal is subject, and which from its situation is often not a little dangerous, if not properly treated. It is caused by frictions of the headstraps of the bridle or halter, and also arises from blows on the head. It first inflames and tumefies, and frequently is not discovered until suppuration has taken place, and the abscess bursts. If discovered in the first stage of inflammation, it will be removed by the remedies recommended under that head; but if matter has formed, and the abscess is open, it must be dressed with lint, and over it a plaister or dressing of some mild digestive ointment, as basilicon, and a warm milk poultice over that may be necessary. If the orifice of the wound is small, it should be opened with a knife, in such a manner as will prevent the confinement of the matter; for if healed too soon, or matter is confined, it makes its way down to the bone, where, corrupting the membranes, the bone becomes rotten, by which the animal is sometimes destroyed.

SORE BACK.

Another part to which the animal is very subject to be attacked with inflammation, abscess, and ulcer, is the back and withers. They generally arise from too small or too large a saddle, &c. The cure of these must depend on the state in which they are first detected: if in the earliest stage, the tumefied part may be well rubbed three or four times a-day with salt, or saltpetre dissolved in cold spring water. If matter forms (which may be discovered by the observations when treating of abscess), warm emollient poultices may be applied over the part, first rubbing it with some spirits of turpentine; and when the

poultices are changed, previous to applying the fresh one, warm fomentations of mango leaves in hot water will assist in advancing it. When ripe, it will burst, unless an opening is made by the knife. I have generally found that the stronger digestives were useful in these ulcers. After the lint is placed on the orifice, a plaister of basilicon ointment, softened with turpentine, will be proper; and if the ulcers are of long standing, or if they have been neglected in the first instance, or have been under the care of ignorant persons, it will generally be necessary to sprinkle some red precipitate, or blue vitriol, finely powdered, on the surface and edges for three or four days. These may be afterwards dressed with an equal quantity of tar and Venice turpentine, and, if this is not found sufficiently strong, the Venice turpentine alone may be applied, first placing a piece of lint on the surface of the wound. It is the very improper treatment which these sores receive in their first state which produces what is termed a warble, and which can never take place if the directions above are attended to. A warble is but an ill-conditioned abscess, in which repellents have been used in the place of emollients, and such treatment generally produces ill-conditioned ulcers, that have been known to penetrate to the spine, and destroy the bones. Such are frequently the effects of the miserable treatment to which this animal is subject, from the ignorance of the persons usually employed to relieve them.

STRAINS.

Strains in the horse are generally situated near the ligaments by which the joints are attached, or in the surrounding muscles, and but very seldom (perhaps never) in the tendons, which are the parts usually supposed to be the seat of disease. The structure of tendons is such as renders them very difficult to be inflamed or in much pain, from their small supply of bloodvessels and nerves, which circumstance renders them almost insensible: they have beside no motion of their own, being dependent on the muscles to which they belong.

A horse seldom strains a joint or the surrounding muscles when animated, as the muscles of voluntary motion are then exerted; and during this state it requires great force to injure them. This is not the case when the animal is careless. For example, when he is moving along a smooth-looking road with careless security, if unexpectedly his foot should slip into a deep hole, the muscles are taken by surprise; and the ligaments alone, not being equal to the weight and exertion of the animal, become bruised by the heads of the bones, for it is, perhaps, the muscles more than the ligaments which strengthen the joints; or the muscles in their relaxed state may be with ease strained, which is very difficult

when they are exerted: muscles may also be strained by over-exertion, as running, &c.

Great circumspection is necessary to ascertain precisely which part of the leg has received the injury. I have very frequently observed cases which have been treated for strains in the shoulder, and other parts, when the lameness positively existed in the foot. The place, however, once ascertained, the principal object must be to reduce the inflammation. We will suppose the shoulder to be affected;—blood should be taken as soon as possible, and the parts affected fomented with mango leaves, in hot water. This should be continued for half an hour, twice a-day; after which, the part should be rubbed dry previous to tying it up with a piece of flannel. If the inflammation does not yield in a few days, I should recommend repeating the bleeding, and fomenting the parts with hot vinegar in which has been dissolved some crude sal-ammoniac, in about the proportion of a drachm to a pint; and if this does not succeed, the whole shoulder should be blistered, the animal put under a course of stimulating medicine, and a rowel or seton put under the chest.

If any other joint is inflamed, it should be treated after the same mode.

Inflammation in the back part of the leg, usually termed the back sinews, frequently leaves an accumulation of coagulable lymph, which hardens, and incommodes the action of the animal; by which also his paces are insecure, and, on exertion, liable to become inflamed. In these cases, I have generally found the greatest benefit arising from very strong mercurial ointment, rubbed in, twice a-day, until the swelling is absorbed. This should be continued for three or four weeks, after which the leg may be tied up for a few days with a bandage dipped in arrack or brandy. Blisters are frequently employed, and in very slight cases, I believe, may be useful.

WIND-GALLS.

They are situated in small cells (*bursæ mucosæ*), which are supplied to those muscles and tendons that are subject to great action, and are very numerous about the fetlock joint. Their property is to secrete or supply a quantity of mucus to lubricate the parts, that they may not suffer from their violent friction during action.

If the animal has been exposed to violent or long-continued exercise, they inflame, and distend to such a degree as renders them visible, and sometimes will occasion a slight lameness, or stiff action.

This complaint can seldom be entirely removed, but is palliated by embrocations of brandy, vinegar, or any other astringent.

MISCELLANEA.

THE REMEMBRANCE OF OLDEN TIMES.

SHERIFFS' COURT, RED LION-SQUARE, AUG. 3, 1843.

CROSS *v.* COLLIS.

THIS was an action brought by Richard Cross, knacker, residing at Camden-town, against the defendant, a tripe-dealer and dog's-meat man, to recover the sum of £4..17s. for goods sold and delivered ; to which the defendant had pleaded a set-off, and paid 15s. into Court.

Mr. Thomas appeared for the plaintiff, and Mr. Horry for the defendant.

Thomas Cross stated that he was the plaintiff's son, and his father was employed in supplying dead horses and asses, and various out-of-the-way preparations, to the Veterinary College.

The Under-sheriff.—What does your father call himself?

Witness.—Knacker, or remover of dead horses, to the Veterinary College. He also deals in dead cows.

The Under-sheriff.—And what is the defendant?

Witness.—A tripe and cat's-meat-man.

The witness proceeded to state that defendant asked his father if he could oblige him with a dead cow now and then, or "any thing of the sort," and expressed a hope that he (plaintiff) would give him a "turn," which was done.

The Under-sheriff.—What do you mean?

Witness.—Why, that I delivered several dead cows to him.

The Under-sheriff.—Where they whole?

Witness.—No, they were cut into pieces and the bones taken out. On the 1st of December I delivered a cow worth 15s., and my father sold the defendant a blind cob at Smithfield.

The Under-sheriff.—That was alive, of course?

Witness.—Oh, yes, Sir, I had "worked" him for several weeks, and my father told Collis that he had taken the cob in exchange for "another horse" for two pounds, and that if he liked to give him that sum he should have it; upon which Collis took it with him. On the 8th of December and the 21st of February he delivered to the defendant two dead cows, at 15s. each; and on the 20th of December another, of the value of 12s.

Mr. Thomas.—Do you know if the cow meat was for dogs or for human beings?

Witness.—No, I can't say that; for he sells tripe—(*a laugh*)—and dogs' meat done up in bundles.

Cross-examined by Mr. Horry.—Did you ever make a present to Mr. Collis?

Witness.—Yes, Sir; but that was not cow's meat. Oh, no.—(*Laughter.*)

Mr. Horry.—What was it, then?

Witness.—A dead donkey, Sir.—(*Roars of laughter.*)

Mr. Horry.—Why was that given to him?

Witness.—Because it was of no use to us, and we thought it might be to him.—(*Increased laughter.*)

Mr. Horry.—Then you send dead cows to the Veterinary College, do you?

Witness.—No; all the cows except one we have sent have been alive. They were sent for examination.

Mr. Horry.—I am to understand, then, that the live cows go to College, and the dead ones and defunct donkeys are given away?

Witness (shaking his head).—No, no; not the cows.

Cross-examination continued.—I recollect receiving a black knacker horse from Mr. Collis; he was werry bad with the staggers, and Mr. Collis could not keep him still in his place. My father agreed to pay twenty-four shillings for it, and this I say on my oath, and will stick to it. I allowed Mr. Collis 25s. for it, cos we always has summat to drink over a horse of that sort.—(*Laughter.*)

Mr. Horry.—Now, do you recollect your father having a black terrier bitch?

Witness.—Yes; he wanted it for Mr. Hamilton, a farmer, but I returned it. But how you talk of these ere things! whereas, when the black knacker horse with the staggers got into our house, he dropped down dead, and I was obliged to kill it.—(*Great laughter.*)

For the defence it was urged, by Mr. Horry, that the parties had been on terms of friendship, and that the cow meat, as well as the dead donkey, had been given to the defendant, who had in return done many favours for the plaintiff; a quarrel, however, had occurred, and hence this action.

Several witnesses were examined to prove the sale of the horse with the "staggers" for £2, two stable-pails, and other articles; and, Mr. Thomas having replied,

The Under-sheriff summed up, leaving the Jury to determine to whose witnesses the most credence was to be given.—Verdict for the plaintiff, £3..6s..6d.

A WAR-HORSE.

"I HAD a black, savage horse, named Barbary, which was sold to me by Lieutenant Strenowitz, a very gallant German officer, honourably mentioned in Napier's history. His crimes and misdemeanours had been manifold; but he was a showy animal, of a glossy black, and a strong, active, and perfect horse, in the fullest sense of the word. Yet on more than one occasion had he so ungenerously behaved, that the order to slay him was on the point of being issued. Once, when I visited his stall, and put my hand on his neck to caress him, he seized me by the breast with his teeth; and if I had not made a desperate struggle to escape, and pommelled him well with my fists about the eyes, but especially if my vest and shirt had not given way, he would, in all probability, have dragged me under his fore feet, and killed me outright. I had the marks of his broad teeth on my breast-bone for three weeks.

"When my servant was showing off this amiable animal in the horse market, an elderly French gentleman was struck with his appearance, and asked his age and price. He then moved round him, scanning his points critically; and afterwards made the man walk, trot, and canter him. This ordeal being passed satisfactorily, the buyer examined the joints, feet, and eyes; and after a long meditative pinch from his snuff-box, proceeded to inspect his mouth. Barbary had hitherto undergone these liberties with forbearance and equanimity; but when this last freedom was taken with his person he uttered a fierce yell, seized the poor man by the shoulder, and proceeded to worry him as a terrier would a rat. The crowd ran to the rescue; sticks and stones rained on Barbary, and he was obliged to drop his prey before he had committed actual homicide. Of course, all chance of sale for that day was over—the wounded gentleman talked of getting him shot by the authority of the mayor; but Jonathan Wild jumped on his back, the crowd opened right and left, and he soon was in his own stable four leagues off.

"I sold this man-eater to a Spanish Capitraz of Muleteers for two doubloons, though he was worth ten or twelve. He soon commenced his tricks with his new master, but he met with his equal in the biting department. These hardy fellows are accustomed to ferocity as well as stubbornness in their mules, and know well how to subdue them. The last time I saw Mr. Barbary, he appeared in considerable distress, but I had no pity to bestow upon him. His new master was clinging to one of his ears with his teeth, whilst a muleteer with a long cudgel was belabouring his ribs on the other side, as hard as he could strike. Under

this pleasant treatment he was leaving Bourdeaux, on the road to Spain ; and, for aught I know to the contrary, the discipline might have been kept up half the way to the Pyrenees."

(*Events of a Military Life, by W. Henry, Esq.*)

CAUTION TO FARMERS.

A VERY heavy misfortune occurred to a farmer in the neighbourhood of Kendal, last week. He had had occasion to remove a considerable number of young cattle from a pasture they had been in for some time to another at a distance, and before driving them out of the field he administered a quantity of rock salt, mixed with water, to each ; a precaution which is usually taken when cattle are removed to a different pasture, in order that they may be less liable to suffer from any epidemic which may happen to prevail in the neighbourhood. The cattle were then driven into a brook, where they were allowed to drink their fill. The effects of the farmer's treatment now became apparent. He had given to each animal about two pounds of salt—too much by half. This had necessarily made them very thirsty, and the unlimited quantity of water they were allowed to drink caused one or two to drop down dead immediately, whilst yet in the brook ; four others expired soon after, and another in a few days, making the total loss amount to seven head. There is not the least doubt but the whole of them were killed by the incautious use of the salt, and the excessive quantity of it.

ACUTE GLANDERS IN THE HUMAN SUBJECT.

MR. HAMERTON, surgeon to the Castle-town Dispensary, has placed upon record three cases of acute glanders in the human subject, all running the same course, and terminating fatally, and all traceable to the same cause, i. e. contagion from a diseased horse. The symptoms in each case were very similar. The disease commenced by the invasion of febrile symptoms of a low type, which were followed by an attack, in one of the limbs, of an inflammation resembling erysipelas phlegmonodes, but of a darker character, and presenting the peculiar feeling earlier ; similar appearances soon presented themselves elsewhere in the system ; sphacelus occurred, together with the formation of gangrenous pustules—the disease next shewed itself in the nose and throat, with an ichorous discharge. General symptoms of strongly-marked typhus appeared, and the patient died, after having been a prey to the most intense suffering.

The identity of the disease with glanders in the horse was proved by the inoculation of an ass with the fluid contained in one of the pustules. The animal soon shewed all the symptoms of acute glanders, and died in five days. So great was the excitement among the peasantry in the neighbourhood, and so alarmed were they by the occurrence and fatal termination of the three cases, that they broke down the house where the ass that had been experimented on was, and would have killed it but for the opportune arrival of Mr. Hamerton. This gentleman seems to doubt the possibility of this disease being communicated from man to man, from the fact that although the three patients were all living in close, ill-ventilated and crowded cabins, and wore the same clothes throughout the disease; in fact, although every circumstance was present by which the atmosphere could be tainted, still neither friend, relative, nor nurse-tender, sickened of the disease. Actual contact with the diseased matter appears to be necessary for the transference of glanders.

Mr. Hamerton concludes by remarking,—in the absence of any therapeutic means of curing, or even alleviating, this formidable and fatal disease, one in which the records of medicine have not furnished a single instance of recovery, and one also in which the physician is unable to afford an interval of ease, or assuage the most frightful agony that human nature is exposed to; with all these facts before us, and in the humiliating reflection of being merely silent lookers on, with all the resources of our art in this disease futile and useless, we should turn our thoughts to preventive measures, and impress upon the attention of the local authorities in our respective districts, the dangerous and fatal consequences likely to ensue by allowing glandered horses to exist, or to be suffered to go at large.

FUNGOID TUMOURS IN THE HUMAN BEING COMMUNICATED FROM A QUADRUPED.

THE journal "*De la Soc. Med. de Montpelier*" states, that a woman in the South of France whose child had died five days after birth preferred afterwards to suckle a lamb instead of another child, or resorting to the ordinary means of preventing the secretion of milk. The woman was of a lymphatic temperament, and had, at one period, been subject to scrofulous glandular swellings, but these had long healed, and at the time in question she was in good health, and had no tenderness or unsoundness of the nipples.

In about a week's time the lamb was observed to be considerably out of health; but it still continued to be suckled. At

the expiration of a fortnight symptoms of unhealthy inflammation manifested themselves on the inside of the mouth and around the lips of the lamb, consisting of a purplish red eruption, with some engorgement of the mucous membrane, and in which some dark red spots were here and there perceived. These spots became the seats of small tumours, of a dirty white colour; and though these soon disappeared by the unassisted efforts of nature, similar tumours arose on the outside of the lips, which remained persistent, and assumed a fungoid character, bleeding from the slightest cause. They grew to the size of a pea, and were attended with considerable irritation of the digestive and urinary passages. The latter symptoms, however, were moderated by an infusion of pellitory mixed with olive oil; and the tumours checked in their progress by a mixture of oil, vinegar, and salt, which, being applied to them, they gradually diminished. The disease, which in the *patois* of the country was termed *boukiehon* (mal-labiale), is popularly considered contagious; nevertheless, the suckling process was allowed to continue for another fortnight, when the lamb was removed.

It would seem, however, that for some time before the final removal of the lamb, the woman had felt pains in her breasts, and observed the growth of several small tumours in those glands. It was after the lamb had been falling away in health for about a week that she noticed around each nipple an unusual redness, that was soon afterwards attended by a burning heat, particularly during the act of lactation. A few days afterwards some purplish spots appeared in the areola surrounding the left nipple, in the centre of which several pimples were seen, each about as large as a pin's head. These pimples were at first red, but soon became of a greyish colour, assuming the same aspect with those around the mouth of the lamb. They increased rapidly in size, became pediculated, and assumed the fungoid and bleeding character. At this period also (Jan. 17, 1841), three similar tumours began to grow on the right breast, and followed a course similar to the preceding ones.

On the 24th of January, the tumours on the left side had become as large as an ordinary sized pea, while the three on the right side had attained almost the magnitude of an almond. The cessation from suckling the lamb was not adopted until this late period.

Emollient poultices and lotions, leeches, &c. were employed with little benefit to the breasts. Compression was next used; but it had only the effect of agglomerating the separate tumours into one. Calcined alum and such feeble escharotics were equally unproductive of any good result.

On the 9th of February the patient consulted the practitioner who has reported the case. At this time the fungoid mass on the left breast was about three inches in diameter in its widest part, of a rounded form, and separated into three unequal lobes. It appeared to consist of an interlacement of arteries and veins, interspersed with some nervous filaments. The tumour on the right side was of a similar kind. No fever was present, and the general health of the patient was not obviously affected.

The morbid growths of the right breast were stopped by the help of the ligature and a powerful caustic; that of the left side required the knife for its removal, but the wound made in the operation readily cicatrised. The above case (we are aware of no recorded instance affording similar proof) clearly testifies the existence of another disease belonging to the category of those communicable from animals to man, of which class hydrophobia, glanders, and the vaccine disease, are striking examples.

Lancet.

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REMARKS ON THE SUPPOSED IDENTITY OF THE WILD
OR WHITE FOREST BREED OF CATTLE (*the URUS*
SCOTICUS of MODERN NATURALISTS) WITH THE PRESENT
PEMBROKE AND WEST HIGHLAND BREED.

By ROBERT KNOX, M.D., F.R.S.E., *Lecturer on Anatomy*
and Physiology, Edinburgh.

[Communicated through the medium of PROFESSOR DICK.]

My dear Sir,—WE have so frequently talked over the physiological and natural history of cattle, that I need no apology for addressing the following Remarks to you, and through you (for that is my object) to the veterinary surgeons of the south of England and of Wales. You possibly may have interest to procure their admission into the pages of that excellent periodical THE VETERINARIAN ; and this, I apprehend, may prove the readiest way of obtaining an answer to several questions and suggestions which you will find scattered throughout this memoir.

About six years ago, probably more, I published in "The Transactions and Essays of the Highland and Agricultural Society of Scotland," a memoir on the wild ox of the Hamilton breed of cattle, confining my remarks as much as possible to personal observation and inquiry. I had no opportunity, it is true, of dissecting the animal carefully, and of instituting a careful comparison between it and any ordinary domestic breed ; but I had the skeleton carefully prepared and articulated, and this, I believe, was the first so set up in Britain. As the work containing my memoir is of easy access, I shall not trouble you with any quotations from it, but shall refer from memory merely to the general results.

After much hesitation, I came to the conclusion that there are now in Britain several *original* breeds of cattle quite distinct from each other, not convertible into each other by any influence

of climate, domesticity, feeding, &c.; and, in addition to these, there may exist cross breeds maintained as such by the breeder.

2d.—That we have not data sufficiently exact to determine the original breeds, and whether there be any in their original condition; that is, quite pure.

3d.—That the readiness with which these various breeds of cattle intermingle by cross breeding, producing animals seemingly productive, is no proof that all or even most of the breeds were originally but of one species; for this many reasons might be given, with which I need not trouble you here. Let two of the now existing breeds be selected as an experiment—the short horned, for example, or Tees Water, and the Shetland or Galloway—and I will venture to predict that the cross breed so produced will never maintain its ground for any length of time as a cross breed, but will return ultimately to one or other of the original breeds, or it will die out altogether. I am, of course, quite aware that this opinion is adverse to that of the most illustrious comparative anatomist of modern times, Baron Cuvier; that it is also contrary to that of Mr. Low, and a host of modern observers; but neither have my own ideas on this point been hastily taken up. In a country like this, so abounding with first-rate cattle, a strictly artificial breed may readily be maintained; but this does not, by any means, prove the artificial to be a natural one. As an instance of what I considered an artificial breed of cattle in a certain sense, and to a certain extent, I instanced the wild ox itself, as he is now found in the great parks of Cadzow and of Tankerville; for, admitting the fact, which I presume to be one, that every calf belonging to these herds which is “off the markings,” or, in plain language, which departs from the pure white or cream colour, considered by their proprietors as the standard of purity of the race, is destroyed; if this be the fact, and I have no reason to doubt it, that such calves are immediately destroyed or withdrawn, so as not to be permitted to influence by breeding the supposed purity of the white breed, then it is quite evident that the white breed itself may be, and probably is, perfectly artificial.

With a view to determine this very point, namely, what is the natural colour, markings, and form of the herds of Tankerville and of Cadzow, I proposed that these cattle should be allowed to breed freely, and that all the calves should be preserved for a considerable period, and allowed, whatever their markings might be, to breed freely with the others; thus their relation to the West Highland and other breeds might and would ultimately be discovered. Lastly, I hinted that the wild or white ox approached most nearly in the form of head, skeleton, and habits, to the West

Highland breed of cattle. Their absolute identity I doubted; but, on being informed that occasionally a pure white or cream-coloured calf appeared amongst the black and red West Highland, I solicited several of my friends to secure for me the first specimen they met with, that it might, when arrived at maturity, be compared with the white ox of Hamilton and of Tankerville.

Again; throughout this inquiry I could not overlook the singular fact, that, wherever I had seen the Celtic race of men, as in the Scottish Highlands and in Wales, their cattle were almost uniformly black, or red, or striped dun. The circumstance that a race of white or cream-coloured cattle exists even now in Pembrokeshire, and in a part at least of South Wales, I first learned from Mr. Low's excellent work on British Domestic Animals. But this circumstance, instead of clearing up, rather added to the existing difficulties; for, on the hypothesis that these white cattle of Pembrokeshire are identical with the Hamilton and Tankerville breeds, and, secondly, that these same cattle are the original breed, the progenitors, unmixed, of the present black and red Celtic cattle, how has it happened that the Celt of Scotland and of Ireland, as little prone to change or to improvement as any of their race, should have declined breeding their white cattle, and adopted the black and red varieties in preference? Some may, perhaps, be disposed to find, in the existence of the white race of cattle in South Wales, a proof of the accuracy with which the late Dr. MacCallagh viewed the Welsh Celt, whom he considered as the most pure of all the Celtic tribes, the most strongly possessed of all the good and bad qualities of his race*.

I admit that it is singular to find among this race of men these very cattle—I mean the white cattle, to which tradition has always assigned a high antiquity. Another hypothesis, however, may be offered, and it is the one I feel disposed still to adhere to,—it is this: The southern parts of Britain and Ireland shew unquestionable traces of strong Phœnician colonies having once settled in them. Many gentlemen have attended my lectures from Cornwall, South Wales, and from the South of Ireland, who evidently belonged to a race of men absolutely different from the Saxon, and equally so from the Celt; these, from

* The inhabitants of Central Wales appeared to me to be strictly *Irish*; and if any one doubts this, let him walk, as I did, from Chepstow to Ruthin, taking Builth, Lhanidlow, Dinas, Monthly, and Bala, in his road. Above all, let him not forget to visit the hovels of the *fine peasantry* occupying the *farms* (!!) of Sir W. W. Wynne, and others, and the appearance of Rebecca and her daughters in Wales will not in the least surprise him; if it does, then I must be wholly ignorant of human nature.

every consideration I could give to the subject, were evidently of an Oriental race: the colour of the hair and skin, the oval face, the chiselled features, their courtesy and politeness, the whole character, in fact, of their mind, shewed them to be neither Saxon nor Celt. Now history assures us that they are of Phœnician origin. May it not have happened, then, that the white race of cattle came into Britain with them, and is now, with them, fast becoming extinct? Or may not the Phœnician, Syrian, or Oriental, have been the earlier inhabitants of all these countries, and the white cattle been a race of oxen they found when they first took possession, long prior to the advent of Celt or Saxon? This is the more probable hypothesis. When Cæsar encountered the Britons in Kent, they opposed to his legions *armed chariots*! These were unquestionably Oriental. When did the Celt or Saxon invent war chariots? or when did the Celt build round towers? But it is time that I state more fully to you Mr. Low's hypothesis: I quote from his very beautiful "Illustrations of the Breeds of Domestic Animals," part i, 1840.

After alluding to the wild oxen of Cadzow, Tankerville, Burton Constable, &c. Mr. Low remarks, "fortunately for the inquiries of the naturalist, the same animals are yet to be found in that part of the kingdom where we naturally should look for the existence of an indigenous race of cattle, namely, Wales, under such circumstances as to set at rest the questions that have been agitated regarding the relation which exists between them and the domestic race. The individuals of this race yet existing in Wales are found chiefly in the county of Pembroke, where they have been kept by some individuals perfectly pure as a part of their regular farm stock. Until a period comparatively recent, they were very numerous; and persons are yet living in the county of Pembroke who remember when they were driven in droves to the pastures of the Severn and to the neighbouring markets. Their whole essential characters are the same as those at Chillingham and Chantley Parks, and elsewhere. Individuals of this race are sometimes born entirely black, and then they are not to be distinguished from the other cattle of the mountains."

In the next paragraph, Mr. Low proceeds to shew that the same breed of cattle still exists in Europe. "That the same race is to be found on the continent of Europe cannot be doubted; and we should probably have had accounts of it either in a wild or reclaimed state, had naturalists been aware of its distinguishing characters. In the defiles of the Pyrenees, cattle, altogether wild, have been observed by English sportsmen, marked in the same manner as the cattle of the Parks, and in no respect to be distinguished from them," (page 4.) These ingenious remarks

and extended inquiries of Mr. Low merit attention from all physiologists, and not less also from the practical farmer and breeder of stock. The breeding of cattle is simply a physiological question: it cannot be discussed as an insulated inquiry, and merely on its own merits, involving as it does so many other questions; and that which renders the whole of these inquiries into the truth so difficult is, the lapse of time, and the vastness of the field required for the thorough examination of any theory offered; the expenses attending such an inquiry also, and the danger of trusting to analogy, which, by reason of the specific differences in animals, is so prone to lead the best thinking mind astray. Anxious to acquire information regarding these Pembroke cattle, and believing that I may not have leisure for some years to visit that interesting ground, I have taken the liberty of addressing through you the following hints and queries for your professional brethren in the South of England and of the Principality. First, it is the opinion of Mr. Low, that "the origin of the domestic ox must be sought for, not in extinct species, but in a race yet existing," and it is evidently his opinion that the original ox is the white forest breed of Hamilton, Chillingham, &c. altered by food, climate, domesticity, into the numerous varieties which adorn the pastures and moors of Britain and Ireland. This was also the opinion of Baron Cuvier. To such a theory, even with the addition of the hypothesis of Dr. Pritchard*, there are objections, in my humble opinion, altogether insurmountable. The conversion, for example, of the Shetland cow into the short horn, of the Hereford into the Galloway, of the Alderney into the Angussshire breed, by any process short of altering the breed by *crossing*, appears to be altogether absurd, and I can scarcely think that Mr. Low seriously maintains it. But, secondly, even admitting that the Shetland and Hereford cattle would breed freely with each other, I maintain that under no circumstances whatever can the cross breed so produced be maintained without a constant reference or return to one or other of the original breeds. The cross, if left to itself, would either altogether cease or die out, or return gradually to one of the original breeds. The same, I am persuaded, holds true in man, and refutes altogether Dr. Pritchard's hypothesis. The white ox of Pembroke is, according to Mr. Low, identical with the common black cattle of the district, and are, in fact, the primitive cattle of the Celt. To this I beg leave to offer the following objections:—

Although I always was inclined to adopt the hypothesis that the wild white cattle and black West Highland cattle might ulti-

* That varieties in man and animals may be produced by accidental circumstances, and may be perpetuated by breeding.

mately prove the same, I hold the matter as still very doubtful. The birth of a black calf amongst these white cattle of Pembroke-shire may prove not identity, but a mixture of two races of cattle (black and white), shewing itself from time to time by accidental births ; and as black cattle abound in the district, and, if I am rightly informed, constitute the great bulk of the Pembrokeshire cattle, it is not at all surprising that a black calf should from time to time appear among its fairer companions : such things happen occasionally among the human race, and is unhesitatingly referred to the influence of a black parent, recent or remote*. Nothing of this proves *identity* ; it merely shews an admixture, recently or remote it matters not ; an admixture influencing unborn races for an unknown period of time. Again ; the birth of a white calf among the West Highland or the Pembroke black cattle does not prove identity of species ; it may as well prove the influence of a breed extinct as a general breed (in Scotland), but shewing itself from time to time among the existing species.

A question here naturally arises, which is this : Are the Pembroke black cattle indentical with the West Highland and Irish cattle, seeing that, according to Mr. Low's hypothesis, they ought to be ? The Celt, Caledonian, and Irish (surely the Highlanders are at least as much Celt as the Welsh), must have preserved his cattle in a much purer state, or in a state nearer their original condition than they could have possibly been preserved on the green hills of Wales, and in the vicinity of all-powerful England. According to the hypothesis I combat, the white ox should abound in Caledonia and in the remote districts of Ireland, and in France, which is pure "Celtic," Welsh to the core ; Welsh out and out†. Now, instead of this being the case, we find them

* In the human race the admixture of dark blood will continue to shew itself for more than a century without the possible return to the original stock : there is no reason why the same law should not hold good in cattle.

† Rebecca and her daughters shew themselves only occasionally in the Principality, and, being but few in numbers, the event is not much attended to. Still, as the inhabitants of the Principality, upon the present system of land tenure, will every year become more and more Celtic, so will Rebecca's visits become more and more frequent. Ireland long ere this (and Wales too) might have been mostly Saxon, with Saxon industry, Saxon steadiness, Saxon respect for law and order, but for the *land tenure*—the *law of entail*. Nine-tenths of the soil of Ireland and of Wales were originally handed over to a few English families, some centuries ago : the entail has kept out Saxon industry and Saxon capital. In the mean time, the Celtic population increases, and now some four-and-twenty English families, possessing most of the landed property (and all the patronage of Ireland and of Wales), call on Britain generally to maintain not so much the British supremacy as their entails. Had Ireland and Wales been conquered for the Anglo-Saxon race, these countries, long ere this, would have been all but Saxon or English. They would have formed a part of England as it were : but it is quite noto-

all but extinct; preserved, only, as it were, by the merest chance in one or two lordly parks, whilst black cattle and red cattle prevail universally.

But, to return to the black and white Pembroke cattle:—South Wales and Cornwall were early occupied by the Phœnicians, who, in all probability, brought this breed of cattle with them, or found them there on their arrival; and thus, in point of fact, they never were Celtic, but were merely accidentally mixed with the Celtic races of cattle, and are now in progress of extermination, like the people or race of men to whom they belonged. This will explain their presence in some parts of France, and amongst the Pyrenean Mountains. With respect to the black Pembroke cattle, it is admitted by Mr. Low himself that they are not quite identical with the West Highland breed. I believe I was the first to hint that, after all, the white droves of his Grace the Duke of Hamilton and of Lord Tankerville might be purely artificial*, and that we do not know on this account what really was the *natural colour* of these cattle; and thus, in fact, still stands the question. It may be that the white Welsh cattle, those of Tankerville, and the white cattle of Hamilton, hold similar relations to the respective breeds with which they come in contact, and may be identical with the corresponding dark race of the county; but I have shewn, I think, that another hypothesis might be maintained with a greater shew of truth. To the scientific and practical men of Pembrokeshire I beg leave respectfully to submit this question. I am quite sensible that there are many difficulties in the way of every hypothesis which can be offered.

The cattle of South America are said, in the course of about three hundred years, to have assumed a uniform colour of black and brown; but, first, is this the *fact*?—and, secondly, were they not so when first introduced?—or, thirdly, has it not happened that in these wilds a predominating breed has prevailed to the extinction of all the others? Do we not daily see that a flock of sheep of a mixed breed, if not artificially maintained by a return to both the original breeds, will speedily assume the character of the predominating breed? Are the horses of the Pampas of one

rious that it was not so; the soil was handed over to a few English and Irish (traitor?) families for their especial benefit, and, being entailed on them, the English Government is deservedly at this moment about to reap the fruits of its far-seeing statesman-like policy. Had Ireland and Wales been open to Saxon industry and capital, where would now have been the Celtic inhabitants? The answer is easy;—In America. It is perfectly a delusion to talk of Ireland and Wales as belonging to England. They belong absolutely and literally to a few powerful English nobility.

* See my memoir, already referred to.

colour? Again; it has been asserted that the wild boar, when in that state, is always of one colour, brown—but, when domesticated, puts on a variety of tints. Here is another difficulty, which I venture to meet in this way:—Has the wild boar been domesticated as such? Can Mr. Low tell us where there is a *pure breed* of the wild pig to be seen *now domesticated*, and, although kept perfectly distinct from the domestic breeds, have notwithstanding assumed the habits and colours of the domestic breed? I am sure, Sir, that you will admit your total unacquaintance with so curious a fact, and I challenge at once its authenticity. This is, indeed, the only way to deal with assertions in support of which we have no authentic records—no journal of observations—nothing worthy the name of scientific research.

I am, dear Sir,

Your's very truly, &c.

FRACTURES IN DOGS.

By WILLIAM PERCIVALL, M.R.C.S., *Veterinary Surgeon*
First Life Guards.

HOPELESS as cases of fracture in horses generally are, from the difficulty experienced in managing the patient, they are by no means to be so regarded in dogs. I have in several instances seen dogs recover, and with very good use of the parts, if not perfect restoration of them, when the accidents have been considered, at the time they took place, of a nature so irremediable as to render it advisable to destroy the animals.

F. F.'s dog, a valuable Irish spaniel, fell, May 4th, 1839, from a high wall, and fractured his off shoulder. On examination, I found the os humeri fractured about an inch above its radial extremity, causing the limb to drop, pendulously, from the side, and depriving the animal of all use of it. The arm—by which I mean the fore-arm—was moveable in any direction upon the shoulder; and there was distinct crepitus: in a word, the nature of the accident was too plain to admit of doubt; nor was there any splinter or loose piece of bone discoverable. I directed that the animal might be laid flat upon his sound side in a hamper or covered basket or box, of sufficient dimensions, but not large enough to admit of his moving about; to have his hind legs fettered, his mouth muzzled, and his injured parts covered with a linen cloth wetted with a spirit lotion.

May 5th.—The parts are tumefied, but not more, or even so much as one might have expected. Continue the lotion.

6th.—At my request Mr. Youatt was called in to give his opinion as to the probability of effecting a cure. He thought, from the inconvenient situation of the fracture, that the chances of success were doubtful; and recommended that a plaster composed of thick sheep-skin and pitch, cut to the shape of the parts, be applied, extending from the upper part of the shoulder down upon the arm, and reaching to the knee; and that the whole should be enveloped in well-applied bandages, one of them being carried over the shoulders and brought round between the fore legs, to support the limb, and aid in retaining the fractured ends in apposition. Prior to the application of the pitch plaster the hair was closely shorn off. Thus bound up the dog was replaced in his hamper, and had some aperient medicine given to him.

8th.—The medicine has operated; and he appears going on well, his appetite continuing unimpaired.

9th.—Last night, through neglect on the part of his keeper, he managed to get out of his basket and take a run about the yard. For the future let him be chained in his abode.

10th.—He growls when I open the basket to look at him. On examining him (while his keeper had hold of him) I found the plaster loosening from its adhesion. I took it off altogether, and applied a fresh one, composed of the stopping composition I use for horses' feet.

June 7th.—Up to this time he has made no escape from his basket; and every thing appears to have been going on properly. The fracture feels as if it were completely united, and, as the plaster continues to adhere firmly, I thought the bandages enveloping it, as they were often getting loose, might now be dispensed with, and that the dog might with benefit be chained to a kennel, instead of being so closely confined as he has been. In moving, he does not attempt to use the fractured limb, but hops along upon the three other legs.

July.—He has acquired pretty good use of the limb. Being now at liberty, he runs about a good deal; halting, from there being some shortness of the limb, but not so much as to prevent him being serviceable, as a "slow" hunter, in the sporting field.

About a twelvemonth ago I was consulted concerning a blood-hound of great size and beauty, and of the cost of £50, that had been a cripple in one of his hind limbs for some considerable time past, owing, it was said or thought, to having received some injury. After a very careful handling and examination of the parts about the hips—the places where he expressed pain—I

came to the conclusion that there had been, and still existed, some fracture of the ischial portion of the pelvis, but precisely where, or of what nature, I could not determine; and all the treatment I could recommend was, that the animal should be shut up within a basket or box of some sort, of dimensions only sufficient to enable him to lie at ease, and that he be kept there for at least six months, without being taken out, save for the purpose of having his bed cleansed or renewed. His owner had previously made up his mind to have him destroyed: understanding, however, from me, that there still remained a chance of his recovery, he ordered his groom to procure a proper basket, and see that the dog's confinement was such as I had prescribed. The man asked me to allow him to have his kennel, which—being no larger than was requisite for him—I did not object to; and to this he had an iron lattice door made, converting it into a sort of wild beast cage. After two months' confinement I had him let out for a short run, and perceived evident amendment. I believe, altogether, he was imprisoned five months, and then was found so much improved that I had him chained to his kennel for the remaining month, and this, I believe, was continued for another month. The issue was, the complete recovery of the animal, very much to the gratification and joy of his master, by whom he is regarded as a kind of unique or unobtainable production.

The fractures of dogs, and other animals, must, of course, be treated in accordance with all the circumstances of their cases; but I have always considered it a most essential part of their treatment that such portable patients as dogs and cats, &c. should be placed and kept in a state of confinement where they either could not, or were not likely to, use or move the fractured parts; and, moreover, I have thought that failure, where it has resulted after such treatment, has arisen from its not having been sufficiently long persisted in.

HOOVE—GOOD EFFECTS OF CHLORINE.

By Mr. W. A. CARTWRIGHT, V.S., Whitchurch, Salop.

ON the 16th Oct. 1842, I was sent for in great haste to some cows that were swollen from eating turnips. An extra quantity had been pulled up and given to them in the field, on account of it being Sunday, and the cowman wanting to leave home. I passed the probang down two of them, but little air escaped.

To five I gave about ʒiiss each of the liquor sodæ chlorinatæ in some cold water. In the course of five minutes the swelling began to subside; a quarter of an hour more so; and entirely soon afterwards.

I have several times passed the probang without any relief being given, and am inclined to think that the end of it is then obstructed by the food, or does not fairly enter the stomach. Once I recollect passing the tube down one, and no gas escaped. On examination I found that the tube was filled with rust; it is, therefore, a good plan to have a stiletto always in it, or at any rate to force a strong brass one up it occasionally. Would it not be advisable to use some other metal that would not rust so much, and also to have the instrument made so that more holes should be up the sides, something like in the tapping trocar?

On one occasion I was called up early in the morning, and when it was dark, to a cow that was enormously swollen. I took with me a bottle of the liquor sodæ chlorin. out of which I must have, rather hurriedly, poured an ounce or two to some water, with which I commenced drenching her; but she had scarcely had above a hornfull or two before she fell down and died. I am almost inclined to think that the chlorine had some deleterious effect in paralysing the glottis. The œsophagus and trachea were ruptured.

A PIG CHOKED WITH A POTATOE FOR A WEEK.

By the same.

Mr. SADLER, of the Hollyhurst, called on me in Jan. 1843, to say that he had a large valuable sow that had been choked with a potatoe during the last three days. I advised him to permit me to go and pass the probang, but he deferred it for a day or two, to see if it would go down of itself. On the following market-day he called to say that she was dead. She had lived just a week with it in her. On examination he found the potatoe in the œsophagus, at about five inches from the stomach, and not in the least dissolved. The inner coat of the œsophagus was destroyed, and there was considerable thickening about the place where the obstruction was situated. The symptoms were an inability to pass any thing into the stomach, as what she swallowed was soon vomited up again.

DEATH OF A COW FROM CHOKING WITH A TURNIP.

By the same.

ON the 19th of March 1843, I was sent for, rather hastily, to a cow that was choked with a turnip, belonging to Mr. Sandford, of Brick Lane, but before I arrived she had expired.

She had been first choked about nine o'clock in the morning, and it was half-past one when I saw her. She was enormously swollen, and had been so most of the time. Nothing but a piece of wood had been put in her mouth to keep it open, and pressure applied to the throat. It was supposed that the turnip was removed.

Examination.—I could detect the turnip midway between the jaws and breast. I cut down upon and removed it, and found that it was the half of a turnip, and that the cut surface bulged out a little, and gave it a rounded appearance. Its greatest diameter was $2\frac{3}{4}$ inches, and its circumference $7\frac{3}{8}$ inches; the length was $3\frac{1}{2}$ inches. It lay lengthways in the œsophagus, so that its diameter was the cause of the obstruction. The jugular veins were very much distended with blood, and the deep seated jugulars were distinct and not very distant from the others. There was considerable effusion on the external parts of the œsophagus, where the obstruction was situated, and the interior of the trachea contained a large quantity of serum and spume. There was also a sort of white secretion lining the greater part of the trachea. I did not see the internal parts, as the butcher had not arrived. Before examining the throat, I tapped her, and her sides completely subsided. I believe, if she had been tapped while living, the turnip would have passed, especially had the probang been used. In performing œsophagotomy, I think that, after we have satisfied ourselves about the situation of the bloodvessels, we had better give a bold deep cut at once, so as to penetrate the obstruction, rather than to cut frequently, and perhaps inefficiently.

RUPTURED STOMACH IN A MARE.

By the same.

ON the 8th of May, 1843, about half past six o'clock in the evening, I called to see a foal of Mr. Wilson's, at Alkington, with diseased hocks, when I was informed that the mare had been

brought home from a field of rye-grass and clover very ill with colic. About two in the afternoon she was seen, and was then well. At four she was seen by a neighbour's servant rolling about in great pain, but who neglected to inform the owner. At nearly six Mr. Wilson's son found her ill in the field, brought her home, and immediately bled her very copiously.

Symptoms.—She was in dreadful agony when she was brought home; she rolled her fore legs clean up, and remained in that position for a short time. When I saw her, she was lying down and easier; but soon afterwards she got up, and stood for half an hour. Her respiration was very quick and laborious; the ears cold; the pulse rapid; her abdomen not at all distended. Some medicine was given to ease the spasm or any distention by gas.

8 P.M.—In nearly the same state. Bled to five quarts, and give pot. purg. \bar{c} opii, &c.

12th.—From the last date to the present she gradually got worse, and occasionally was up and down; but most of the time she was standing up, and breathed very quick, and the pulse at the jaw became more and more indistinct, until at last it was imperceptible. When she lay down, a quantity of air was belched up the œsophagus, and forced through the mouth; but I could never see any grass accompany it. When down, she would stretch her head and neck forward along the ground, and force the air up the œsophagus, and which could be seen rising up. About twelve at night she died in dreadful agony.

Examination.—The whole of the intestines were healthy and natural. The abdomen contained about four gallons of discoloured water. Some few portions of masticated grass were found among the intestines; but the quantity was so small, that it merely proved there was a rupture. I then directed my investigation towards the stomach, and the mischief was clearly shewn. We had the mare lying on her back, and towards us lay, in the neighbourhood of the stomach, a large quantity of masticated green grass, beautifully covered by and confined within the omentum. On removing this, we discovered that there was a rupture of ten inches in length through the entire coats of the stomach, and a farther rupture of five inches through the peritoneal and muscular coat only, leaving the mucous coat and strong cellular tissue entire. The rupture was not exactly along the greater curvature, but about the middle of its inferior side, in the direction of its greater curvature. There was a little coagulated blood on its ruptured edges, but there was no appearance of any quantity of blood being lost. The rupture extended for five inches along the cuticular coat, the other being along its

villous coat. The posterior surface of the diaphragm was rough, and shewed that it had been subject to rather severe usage. About a gallon of serum was in the thorax. The lungs were sound.

SORE SHINS.

We are glad to be enabled to insert, although late, and that through no fault of Mr. Friend's, an engraving of the appearance of the fore-leg of a mare under that sadly painful malady "sore shins."

She may be named "Mr. Friend's bay mare Protégée, by Patron," half bred.

Mr. Friend's Observations on Sore Shins in the Horse will be found in page 477 of this volume.



A CASE OF POLYPUS IN THE HEART OF A QUEY CALF.

By Mr. JOHN KAY, V.S., Pontefract, Yorkshire.

HAVING been a reader of your valuable Periodical for a great number of years, I beg leave to transmit a small contribution—a mite of gratitude—for insertion in its pages. It will not be uninteresting to many of your numerous readers.

I was requested to look at a valuable quey calf, thirteen months old, on the morning of the 8th August last, the property of Mr. William Kitchen, of this place, and which had previously been under the management of a cowleech in the neighbourhood. On examination, I found that the pulse beat 70 per minute, and full and bounding, but rather irregular—the temperature of the extremities varied—the respiration was accelerated—the appetite impaired, and the bowels constipated.

Being rather sceptical as to the nature of the case from the above symptoms, I could not at once arrive at a correct diagnosis of its character; however, I immediately abstracted three pounds of blood from the jugular vein, inserted a seton on each side of the chest, and administered a laxative drench, mixed with some linseed tea.

3 P.M.—The symptoms are somewhat relieved; the pulse 60, but still irregular; the respiration rather tranquil. No more medicine was given; but some linseed gruel.

9th, 10 A.M.—The bowels are relaxed; the pulse 52; appetite improved; taking her gruel with avidity, and, on the whole, seemingly much better.

10th.—This morning the symptoms indicated a change in the appearance of the disease; the bowels still regular; appetite not so good; pulse quick and intermittent. As the animal was evidently worse, I made a more careful diagnosis of the case, and arrived at the conclusion, from the irregularity of the circulatory system, that something abnormal must exist in the fountain head of circulation. Accordingly the treatment was altered: I administered stimulants combined with tonic medicine, and ordered nutritious diet to be given.

11th.—To-day the appearances of the disease are more characteristic of a morbid state in the heart's action; the pulse very feeble and irregular; great prostration of strength, with a partial paralysis of the hind extremities, &c. Still continue to give medicine as before. This treatment was continued every eight hours until the 19th, when rapid strides were made towards approach-

ing dissolution. I again warned my employer, as I had done several times before, of the unfavourable appearance of the case. He expressed much anxiety respecting this peculiar breed of cattle. The calf, however, continued to suck during the day, and our patient died at five o'clock in the afternoon.

Post-mortem examination. — On inspecting the abdominal cavity, the whole of the viscera presented a healthy aspect. Penetrating into the cavity of the thorax, the lungs assumed a more blanched appearance than natural, and, cutting into the substance of the heart, I found a polypus adhering to the interior of the muscular parietes of the right auricle. On carrying my examination to the right ventricle, a similar morbid structure exhibited itself, adhering to the muscular substance of that cavity, and which, when removed, weighed from five to six ounces.

On conversation with the owner, I was informed that he had previously lost two calves about the same age, and both by the same cow, exhibiting the same symptoms previous to death.

THE FATAL EFFECTS OF THE YOUNG LEAVES OF THE COMMON LAUREL WHEN EATEN BY DUCKS.

By Mr. ROBERT READ, V.S., Crediton.

MR. TREMLETT, of Lower Creedy Farm, has for several years past lost nearly the whole of his ducks, when about three or four months old, in a very singular manner. There is no symptom of illness as a precursor. They seem to be in perfect health only a few minutes before they are seized, and then all at once a peculiar nodding of the head comes on, followed by vertigo and insensibility and death. Not more than from three to five minutes occur from the commencement of the first symptom to the termination of the affair.

Curiosity led to the opening of some of them, when a considerable quantity of the young leaves of the laurel was found in the crop and gizzard. There is no doubt that the leaves remained inert while in the crop of the ducks; but as soon as they reached the gizzard or true stomach, their specific action commenced, producing symptoms similar to prussic acid, when animals are poisoned by it.

This interesting case should operate against farmers planting laurel shrubs in the pleasure-grounds adjoining their poultry yards, or any other place to which the ducks can have access.

Perhaps you may think this not worth reporting in *THE VETERINARIAN*; but as it interests the farmer, or rather his "good housewife," it may be on that score worth accepting, more especially as our Journal does not confine itself to the diseases of one animal, but extends to every class, from the stable to the poultry yard. It is also the duty of all of us to attend to every class of animals, no matter how inferiorly linked in the order of living beings; for there is, to the natural philosopher, as much pleasure in contemplating the habits of the smaller as the larger animal, and as much instruction afforded in their comparative habits.

ON ANIMAL HEAT;

COMPRISING AN ATTEMPT TO RECONCILE THE FACTS ATTENDANT ON ITS DEVELOPMENT, WITH A PHYSICAL PRINCIPLE OPERATING TO PRODUCE IT HITHERTO OVERLOOKED.

By Mr. JAMES W. WINTER, M.R.C.S.L., Guildford.

[We deem these observations on Animal Heat exceedingly valuable. There is much important matter contained in them, and none of our readers will rise from their perusal without pleasure and improvement.—ED.]

A CONSIDERABLE share of experimental research and philosophic attention has been directed, at different periods, to the discovery of the causes operating within the living animal, by which it acquires and maintains an independent heat, so wonderfully regular in its supply and consumption.

Amongst the illustrious men who have endeavoured to withdraw the veil with which nature has enveloped this remarkable process are found Boyle, Priestley, Black, Hunter, Home, Crawford, Lavoisier, Franklin, Davy, Brodie, and Magendie,—a satisfactory proof that the investigation has not been hitherto considered valueless. Did the laws which regulate the thermal properties of animals admit of direct proof,—if it were possible satisfactorily to ascertain by what powers they are governed,—the inferences from such data, could they be established, would be of the first importance to the physiologist and practical medical man. "An inquiry," says Crawford, "into the causes which

maintain the balance of heat in the animal economy, will probably give rise to improvements in the prevention and cure of disease." (On Animal Heat, p. 438.)

2. The source of animal heat, whether it be supplied by chemical, vital, or purely physical action, has been a most fertile subject of theory; but no position which has yet been assumed is considered fully explanatory. The celebrated John Hunter, who carefully examined the subject in all its bearings, declared himself dissatisfied with all the hypotheses that had been adduced to explain it. "The theories hitherto brought forward do not in the least satisfy me, as I think that none of them accord perfectly with every circumstance observable in these cases." (Hunter's Works, by Palmer, vol. iii, p. 16.) Müller, in his late physiological work, after reviewing the various theories promulgated on the subject, considers that some other supply of animal caloric is still undiscovered. Mr. Mayo is yet more confident "that the source of vital heat remains unknown." (Physiol., p. 96.) "No attrition," says Blagden, "no fermentation, or whatever else the mechanical and chemical physicians have devised, can explain a power capable of producing and destroying heat, just as the circumstances of the situation require." (Phil. Trans., 1775, p. 112.)

3. By this peculiar property the animal maintains a temperature apparently independent of extraneous circumstances, at once "constant, equable, and perpetual."

4. In the *human being* the degree of heat acquired is not so high as in some other classes of the mammalia. Blood heat is generally quoted at 98° of Fahrenheit's scale, but this is certainly beneath the usual internal temperature. Dr. Beaumont, by placing a thermometer in the stomach of a living and healthy man, ascertained that the heat of that part of the frame averaged 100° . Müller found the temperature of the mouth and rectum to vary from 97.7° to 98.6° ; while that of the more internal parts of the body was from $100\frac{2}{3}^{\circ}$ to $101\frac{1}{4}^{\circ}$. Dr. Thompson places it at 101° , and Magendie at 101.75° Fahr.

5. From the copious tables which Tiedmann has compiled of facts ascertained relative to the heat of different genera of the *mammalia*, it is seen that in some of them, such as the ox, horse, and elephant, the temperature is not quite so high as that of man; while that of the squirrel, the ape (*simia aigula*), the bat, and the whale, ranges rather above his natural standard.

6. The heat acquired by many *birds* rises considerably above that of the mammalia. In the common pigeon it is 106° , in the vulture 107° , and in the raven sometimes as high as 109.23° . Dr. Edwards found the heat of sparrows to range from 105° to 110° .

7. The temperature of the *cold-blooded vertebrata* is generally low, and that of the amphibia and reptiles only a degree or two higher than the surrounding medium. This is not always the case, for in tropical countries the land-tortoises maintain a temperature considerably less than that of the atmosphere. "The temperature of the air of the Gallipagos Islands varies from 72° to 75°; that of the blood of the tortoise is always 62°." (Porter's Journal, p. 215.) Fishes usually support an internal heat slightly superior to the temperature of the water they live in. Some exceptions, however, have been discovered. Dr. Davy found that the thunny (*thynnus pelamys*) possessed a heat of 99°, when the surrounding water was only 80½° Fahr.

8. *Insects* develop a degree of heat governed mostly by the temperature of the medium in which they move. Mr. Newport, in his experiments on them, was always able to detect an independent temperature, which in some cases exceeded that of the atmosphere by 20°. When quantities of them associate together, the heat produced is considerable. J. Hunter placed a thermometer in a bee-hive, and ascertained that the temperature varied in spring from 93° to 98°, and in the summer it reached as high as 104°.

9. *Plants* give satisfactory evidence of the possession of a temperature independent of external circumstances. When snow falls on plants, the first part which melts is that immediately investing the leaf. On inserting the bulb of a thermometer into a hole cut in a tree, the mercury invariably rises beyond that of the external air.

10. The use of the mercurial thermometer for measuring slight variations in the temperature of the animal, or of its different component parts, is not without a great liability to error. It is very difficult of application to the internal organs, without detriment to the experiment, and in many instances objectionable, from the impossibility of its being affected unless it obviously abstracts a proportion of caloric from the tissue to which it is applied. On this account the experiments of MM. Becquerel and Breschet, who employed, in their investigations on the subject of animal heat, the thermo-electric multiplier, which is free from the sources of error affecting the common thermometer, are worthy of the firmest reliance.

11. Most writers on animal caloric agree that the temperature of the foetus is supplied wholly by the mother. This rests altogether on supposition. There is, however, some reason to doubt the correctness of it, from the fact of the cold sensation experienced by the parent on the occurrence of inter-uterine death.

12. It is asserted by Dr. Edwards, and by Despretz, that the

actual temperament of newly-born animals is much lower than that which they subsequently are possessed of. According to the former a new-born infant raised the thermometer no higher than $94\frac{1}{4}^{\circ}$. Something, however, ought to be allowed for evaporation. Dr. Davy found the temperature of the axilla of a child just born to be 98.5° ; twelve hours afterwards it stood at 99° , and in three days it was still the same.

13. In old persons the power of generating heat decreases with the decline of vital energy.

14. Many experimenters have observed a diurnal variation of animal temperature. It was seen to be lowest in the morning and highest towards evening. According to Anteuvieth it is $1\frac{1}{2}^{\circ}$ Fahr. lower during sleep than in the daytime.

15. Some have supposed that the process of digestion tended to increase the temperature; but from the peculiarly fortunate opportunity which Dr. Beaumont had of ascertaining the fact, it was found to be but slightly affected by the exercise of that function.

16. Dr. Granville has communicated some remarkable facts respecting the temperature acquired by the uterine system during parturition. From his statement it appears that the free caloric of these organs is then greatly increased. Occasionally he observed it to rise as high as 120° Fahr.: the elevation always bore a proportion to the degree of action excited in the organ.

17. The external temperature of different parts of the body decreases in the ratio of their distance from the centre of circulation. Thus, a thermometer placed in the axilla of the human subject stood at 98° Fahr.; when placed at the loins it indicated a temperature of $96\frac{1}{2}^{\circ}$, on the thigh 94° , on the leg from 93° to 91° , and on the sole of the foot it only reached 90° . It was also found that the brain possessed a lower temperature than the rectum.

18. Dr. Davy, Magendie, and Thenard, have asserted that arterial blood is superior in temperature to venous by 1° . This was ascertained by putting a thermometer into the right and left sides of the heart. Others have failed to discover this difference; and the late Professor Coleman stated that he had found the right side of the heart the warmest by 1° or 2° Fahr. Mayer found the temperature of the blood in the jugular vein to be from $2\frac{1}{4}^{\circ}$ to $4\frac{1}{2}^{\circ}$ Fahr. lower than that of the carotid, but he could distinguish no difference in the temperature of either side of the heart. MM. Becquerel and Breschet found with their thermo-electric multiplier that the blood in the left auricle of a turkey was 1.62° Fahr. higher than the blood in the right auricle.

19. The heat of the body is depressed several degrees below

the natural standard in the affection termed *morbus ceruleus*, where the foramen ovale remains unclosed, and admits of a portion of the blood passing from the right side of the heart to the left without being transmitted through the lungs. In Asiatic cholera a thermometer placed in the mouth rises only to 77° or 79° . Coldness of the body is also symptomatic of hydrothorax, and of repletion of the air-cells with mucus, in chronic bronchitis. (Elliotson.) It is stated by Martine that long fasting diminishes the temperature. Dr. Currie, by placing a thermometer in the palm of the hand during syncope, ascertained that it stood as low as 63° Fahr. Mr. Earle asserted that the temperature of the hand of a paralyzed arm was as low as 70° Fahr., while that of the sound side raised the mercury to 92° . On electrifying the diseased limb its temperature increased 7° . MM. Becquerel and Breschet could not succeed in detecting any difference between the sound limb and the paralyzed one in a case of hemiplegia.

20. Under the influence of various circumstances the temperature of isolated parts of the body becomes temporarily exalted. The sudden local determination of blood, accompanied with increase of heat, produced by the operation of the mind, as seen in blushing, is carried often to such an extent as to produce a copious perspiration from the parts. "When a function is going on vigorously, the temperature of the individual part rises." (Elliotson, *Phy.*, 231.) MM. Becquerel and Breschet found the temperature of a scrofulous tumour raised as much as $5\frac{1}{4}^{\circ}$ Fahr. above the general heat of the body. This fact is worthy of attention, as it had been previously asserted that in inflammation the part affected did not acquire a higher temperature than that of the internal parts of the frame. The same experimenters also observed that the heat of the body was exalted $5\frac{1}{2}^{\circ}$ during a fever. The temperature of the body in a feverish state, according to Dr. Elliotson's observations, was often raised from its natural standard to 107° Fahr., and in tetanus he remarked it as high as 110° Fahr.

21. MM. Becquerel and Breschet observed that muscular contraction was attended with an exaltation of the temperature of the part to the extent of from $1\frac{1}{5}^{\circ}$ to $3\frac{3}{5}^{\circ}$ Fahr.

22. The animal frame maintains its caloric at very low atmospheric temperatures. During the northern expedition of Captain Parry the thermometer often stood so low as -52° Fahr.; it was usually at 32° below zero, at which time he found the blood-heat of some foxes which were caught was from 98° to $106\frac{3}{4}^{\circ}$.

23. Neither has external heat so great an effect in raising the animal temperature as might have been anticipated. We have already seen (7) that the land-tortoise of an equatorial island

keeps itself much cooler than the surrounding atmosphere. Dr. Davy found that the internal temperature of the human body, when exposed to a tropical climate, was from 2.7° to 3.6° Fahr. higher than in the more temperate climates. The French naturalists appointed to the Bonite also investigated this subject. They made numerous experiments, and the inference from them was, that the heat of the human body rises and falls, in a slight degree only, with that of the external temperature; and that it falls slowly in passing from a hot to a cold climate, but rises rather more rapidly in returning towards the torrid zone.

24. Experiments have been instituted in order to ascertain the effect of high artificial heat on the animal economy. Blagden, Fordyce, Banks, and others, have exposed themselves to heated apartments, varying between 198° and 211° Fahr., and for a short time even so high as 260° . But they found that the body possessed capabilities of maintaining nearly its original temperature from the cooling effect of increased perspiration. That it was due to this circumstance was substantiated by De la Roche, who, having heated the atmosphere of an apartment, and at the same time saturated it with moisture, in order to prevent exhalation from the skin, found that the heat of the body when so exposed rose from 4° to 9° Fahr.

25. Having briefly directed attention to the principal facts that have been already ascertained to accompany the exercise of this important function, it now remains to point to those means by which it is supposed vital heat is generated and supported within the body. Among the most popular and plausible of modern theories on the subject is the one propagated by the joint exertions of Lavoisier and Laplace. Knowing that heat often resulted from chemical changes in inorganic matter, they ingeniously supposed that something similar occurred during the performance of the respiratory process, an animal function partaking of a chemical character. In this act the oxygen of the atmosphere combines with the carbon of the blood in the lungs and forms carbonic acid, which is thrown off during expiration. But by carefully measuring the quantity of carbonic acid so formed, and the quantity of oxygen lost, it has been ascertained that more oxygen disappears than is necessary to the formation of the carbonic acid. To meet this slight discrepancy it has been supposed that this portion of oxygen, which does not participate in the combination with the carbon, unites with the hydrogen in the blood, and forms water, which is exhaled. The theory of those who maintain respiration to be the main source of animal heat, is founded on the hypothesis that during these combinations a quantity of heat is evolved, which is immediately ab-

sorbed by the blood, and conveyed by its circulation to all parts of the body.

But it was urged by the doubters of the correctness of this theory, that, if this view was the true one, why was not the blood on leaving the lungs exalted in its temperature above what actually takes place? To obviate this objection, Dr. Crawford supposed that arterial blood had a greater capacity than venous blood for caloric; and that the heat so generated in the lungs, and imparted to the arterial blood, became latent, and was not set free until this blood assumed again its venous character in the various parts of the body. The weakness of this course of argument was proved by Dr. Davy, who shewed that the capacity of the two kinds of blood for caloric was nearly identical.

26. Some later theorists have imagined that the oxygen which the blood extracts from the air is combined with the carbon in the course of the circulation, and not in the lungs. This view certainly accords with most of the facts noticed, but fails in providing sufficiently for the amount of heat acquired by the animal; and the general inference, from a most extensive course of experiments, is, that if the absorption of oxygen be a cause of vital heat, it can only be a partial one. "There must be other sources of animal heat besides respiration," says Müller. (Physiol., p. 92.)

27. To the organic secreting functions have been assigned, by some physiologists, an important part in the generation of animal caloric. They imagine that, in the different secreting processes of the body, the fluids formed having a less capacity for heat than the blood from which they are separated, must be the means of rendering sensible heat that was before latent. This position has been denied by other examiners, who have failed in detecting the necessary difference of capacity for caloric between the secretions and the blood from which they are taken.

28. M. Pouillet supposed he had discovered another source of animal heat in the elevation of temperature which occurs on the moistening of solid bodies with different fluids. The increase of heat said to attend the process of digestion may be given as an example illustrative of his views.

29. As is generally the case when we are at fault in providing sufficient cause for any physiological or pathological difficulty, the nerves are resorted to in order to mask our ignorance. So in this case, some physiologists, despairing of discovering satisfactory proof of the source of vital heat, allege that it must consequently be nervous. That the temperature of a limb becomes less on the division of its nerves is no reason that animal heat should be necessarily supplied by nervous action. The section of a nerve

diminishes the vital action of the part it supplies, and consequently may only operate indirectly. Hunter remarks that the power of generating caloric cannot "depend upon the nervous system, for it is found in animals which have no brains or nerves." (*Animal Econ.*, p. 104.) Acephalous fœtuses have been often known to maintain their heat for several days.

30. I will now proceed to detail a cause of animal caloric which appears to have been hitherto overlooked. It is founded on a discovery which I accidentally made,—that elastic substances, or bodies capable of reassuming their original shape when the power operating to extend them is removed, give out a quantity of caloric proportionate to the mechanical tension to which they are submitted. It is probable that this manifestation of heat by elastic bodies, when stretched, is only a modification of the general laws regulating the production of caloric during the changes of form in matter generally; some sudden alteration of the position or shape of the component particles thus rendering heat sensible which was before latent.

31. That elastic substances do thus eliminate heat when stretched, is proved by submitting a body so endowed, caoutchouc, for instance, to considerable tension, in close approximation to the bulb of a sensible thermometer, when, in proportion to the power exercised in dilating the body, will be the quantity of caloric set free, and its consequent effect on the thermometer. It is also proved in a yet more familiar manner by grasping firmly the ends of a large strip of gum-elastic, and stretching it across the chin, when the heat evolved is immediately perceptible to the senses.

32. This curious property, inherent in elastic substances, is supposed to have a material effect on the generation of animal warmth. It is well known that many of the component parts of the living frame are endowed with a considerable degree of elasticity, and it is but reasonable to suppose that, whenever this property is exercised within the body, the same physical phenomena result as are witnessed outside it. The tissue composing the arteries is of a highly elastic nature. The same property is also possessed by the trachea and bronchial tubes, though perhaps somewhat less in degree. When these properties are called into play, warmth is produced. On the contraction of the left side of the heart the column of blood occupying the arteries is suddenly increased, and a dilatation of their coats consequently ensues, forming the pulse. During every such dilatation of the arterial tissue throughout the body, a portion of caloric, governed by the power and extent of the expansion, is set free, and, communicating itself to the blood, spreads general warmth. The same thing occurs when

the elastic property of the bronchial passages is called into action. Indeed, wherever elasticity is found, when exercised, the same effects invariably result. Muscular contraction, by which the fibres composing the muscles are, by their own peculiar nature, thrown into a state physically analogous to the coats of the arteries during their dilatation, is likewise a fertile source of caloric.

33. But we have convincing proof that the elastic tissues of the body are capable of producing warmth. As the arteries maintain their elasticity after death, if we take, for convenience sake, a portion of the aorta of any large animal, the horse, for example, and close one end by tying it round a cork, and fix it to some weighty article, attach strings to the open end, in order that the warmth of the operator's hands may not interfere with the experiment, fill the artery with water at the temperature of the atmosphere to within an inch or two of the mouth, let fall into the water a delicate thermometer, note the temperature, and then by pulling the strings so as to call into play the elastic properties of the artery, we raise the mercury of the thermometer in a few seconds. But the small arteries piercing the coats of the aorta, by allowing the transudation of the fluid employed, produce a considerable degree of evaporation, which interferes with the correctness of the illustration; for, on performing the experiment, it will be noticed that soon after the operator ceases to exert the elasticity of the artery, the fluid acquires a lower temperature than it before possessed. To obviate this source of error we may employ a tube of Indian-rubber, fixed and treated in the same way, and the increase of temperature will become more marked and lasting. In less than half a minute, by moderately calling into play the elastic nature of the gum, we can raise the mercury of the thermometer 4° or 5° Fahr.

34. Now, when it is taken into consideration that the elasticity of the arteries is incessantly at work throughout the whole bulk of the frame, it will cease to be a matter of surprise that warmth is generated. The extension of the arterial coats takes place both in length and in the direction of their diameter, but their elongation is much more considerable. Poiseuille invented an instrument for measuring arterial dilatation, which he found was about $\frac{1}{23}$ of the arterial capacity. Hunter let a horse bleed to death, and found that the aorta had contracted to the extent of more than $\frac{1}{10}$ of its diameter, the iliac artery $\frac{1}{6}$ th, the crural artery $\frac{1}{3}$ d, and that arteries of the thickness of the radial in man were completely closed.

35. It cannot, then, be denied that the arterial tissue plays an important part in the generation of vital heat. But, at the same time, it is also probable that the property of elasticity found

in other parts of the body may materially assist in its elimination. By receiving this explanation we can readily account for the phenomenon of evolution of heat resulting from increased circulation, which was inexplicable on the respiratory theory alone. It explains why the warmth of old persons (13) diminishes. Their tissues gradually assume a less elastic character. The arteries themselves often become ossified in distant parts of the body, giving rise to gangrena senilis, from a loss of the elastic power and consequent diminution of temperature.

This view also accords with the facts noticed with respect to the diurnal variation of animal temperature (14), and also with its being lower during sleep; both being regulated by the intensity of the circulation.

That digestion (15), by rousing the powers of the body, should slightly increase its temperature, admits of explanation on the same grounds. The mechanical distention of the stomach, together with the contraction of its muscular fibres, may have a tendency to increase the effect produced by a vigorous circulation.

If it be a fact that ceruleans have a low degree of vital heat (19), it would certainly tend to justify the arguments of those who assume respiration to be a source of animal caloric, and it might go far to prove to what extent its influence prevailed. That disease, in which the circulation of the blood is obstructed and unnatural should produce a lower temperature, is easily conceivable.

If the temperature of paralysed parts (19) is decreased, the wasting in bulk of a limb so affected shews evidently that the circulation is obstructed.

Obstructed circulation may also be referred to as the cause of the diminution of heat in various diseases, and in syncope (19), when the action of the heart is temporarily suspended.

The heat eliminated by sudden determination of blood produced by the excitation of the mental organism (20), may be viewed as resulting from a peculiar excitement, directing an increased flow of blood to the superficial arteries.

That muscular exertion should be productive of warmth (21) may, as has been before hinted, arise from the operation of two causes,—increased circulation through the muscular tissue, and throughout the body, when muscular action is considerable, and on a physical generation of caloric during muscular contractility.

In diseases where the action of the circulatory organs is unduly increased (20), and the countervailing influence of perspiration stopped, it is not surprising that the free caloric should be considerably above par. The same remark applies to the more circumscribed abnormal actions, as the tumour, wherein MM.

Becquerel and Breschet discovered a considerable increase of temperature above that of the surrounding parts.

The great increase of temperature of the uterine system (16) during the act of parturition may be explained by the increased vascularity of the parts, and by their extraordinary dilatation originating an additional source of caloric. That the temperature of the parts of the body lessens with their distance from the centre of circulation (17) may be accounted for by the decrease of elastic arterial tissue as the arteries diminish in size, and by the greater comparative surface which the extremities offer for radiation.

Increased or diminished vascularity explains why the temperature of the brain should be lower than that of the rectum (17).

That arterial should possess a higher temperature than venous blood (18) is further confirmatory of the view I have taken. It is also probable that the slight difference of temperature of the blood in the two sides of the heart may be occasioned partly by the superior muscularity of the left side over the right, and partly by its passage through tubes possessing elasticity.

That animals preserve their caloric at very low temperature (22) is not at all incompatible with the view I have taken of its probable source. On the contrary, it confirms it; for by assigning to the arterial tunics the chief power of producing heat, we explain readily why the body maintains a nearly uniform heat during the variations of temperature of the atmosphere. The influence of heat and cold on the animal tissues generally, and the arterial tissue in particular, is well understood; the one dilates them, and the other renders them more contractile. By putting one arm into a bucket of warm and the other into a bucket of cold water, we diminish the force of the pulse in the former, but increase it in the latter case. The same thing occurs throughout the whole body when under the influence of general cold. The arteries become more fitted to the production of heat by the increased tone of their contraction. A circumstance further illustrating this view has been observed in animals drowned in hot water, when the action of the heart irrecoverably ceases sooner than if drowned in cold water.

It has been already seen (23, 24) that the living animal frame may be exposed to high natural or artificial temperatures without its own internal heat being materially disturbed. That this is mainly attributable to the cooling influences of the skin and lungs has been incontrovertibly proved by De la Roche. Under ordinary circumstances the production of heat does not exceed the degree required for the proper performance of the animal functions. There is a balance between the supply and consumption of it. This takes place when the body is in a quiescent

state. But it often happens, during the exertions of the animal, or when the body is placed in an unusually high temperature, or wrapped in materials which conduct heat slowly, that the generation of heat exceeds the immediate consumption, and the actual temperature of the whole body becomes increased. Nature, however, has beautifully adapted the animal body to keep up a temperature no higher than is necessary to its economy. Accordingly, when any circumstances occur which tend to an unnecessary manifestation of vital heat, by the very power which propels the blood with increased force along the arteries into the capillaries is the reduction of caloric obtained. The pores of the skin are opened, and, giving out abundant watery exudation, act by the powerful means of evaporation to diminish the temperature of the body. The local effect of evaporation is well marked in the coldness of the dog's nose: the part being generally moistened is surprisingly cold; but should the exudation be stopped by any internal cause, the nose acquires a temperature identical with that of the other external parts of the body.

36. It usually happens that the atmospheric air received into the lungs during respiration becomes considerably increased in temperature before leaving the body. It carries off an important quantity of the superabundant caloric generated in the animal frame. It serves to graduate that heat, and the heat of the expired air is always proportionate to the internal warmth of the body. The air, therefore, which enters the lungs, instead of being a source of warmth, becomes the means of refrigerating the internal parts of the frame. The extensive surface offered by the air-cells of the lungs for evaporation materially assists in cooling the body. The powerful influence which the admittance of air into the lungs has on the regulation of the internal temperature may be inferred from the fact of the land tortoise of hot countries (7) keeping itself several degrees cooler than the atmosphere. It must be recollected that this animal is covered with a horny shell, almost wholly precluding the possibility of evaporation from the external parts of the body. Still we must not generally regard all the heat acquired by expired air as derived solely from the blood. The whole respiratory apparatus, including the trachea and bronchial tubes, to their minutest ramifications, is provided with elastic tissue for the production of warmth. Throughout the whole course of these tubes, on every inspiration, heat is generated. By these means the air acquires an increase of temperature before it comes into juxta-position with the blood, and the shock is not so great to the system as it would otherwise be.

The air admitted into the lungs affords an abundant source of latent heat, which the elastic tissues may absorb during their relaxation.

37. An objection might be urged against the position I have taken, to the effect that the elastic tissue would absorb as much caloric, on its re-assuming its usual dimensions, as it gave out during its distention. It is probable that it does again absorb heat; but it would appear, in operating with a single artery removed from the body, that on its resumption of its primary form it receives caloric from whatever surrounds it, and thus its own temperature is actually increased. The same thing, on a more extended scale, takes place throughout the body, and the fact cannot be controverted. The extensive admittance given to the air through the internal parts of birds and insects may operate, by supplying a ready source of latent heat, to exalt their temperature so considerably beyond what might have been anticipated.

38. As the distention of the arteries depends on the quantity of blood contained in them, so, when that quantity is decreased by blood-letting, or other means, might it not be expected that the animal heat would be less, from the fact that the elastic coats of the arteries being less exercised, consequently supply a diminished quantity of caloric?

39. If the heat of the body were entirely ruled by the respiratory process, would it not be found that when respiration were quickened the heat of the frame would be increased proportionately? but the contrary is often the fact, and the body and extremities become cold when that process is abnormally increased.

40. The independent heat which trees and plants support above that of the atmosphere may be also referred to the exercise of their elastic properties when agitated by the winds. Should this be the case, their temperature ought to be greatest in windy weather.

41. Upon an examination of all the circumstances affecting the generation of vital heat, it will, I think, be admitted,—

That the elastic and contractile tissues of the body are a fertile source of its heat, and that they form the main, if not the sole, means of its production.

42. In the course of this investigation I have given the principal facts attendant on the phenomena of animal heat from the authority of scientific examiners. I have not perverted them to meet my own peculiar views on the subject, but have endeavoured to shew, as briefly as I possibly could, the close connexion which exists between these phenomena and what I imagine to be their principal cause. If there be any merit in this essay, it consists in the assertion of the discovery of a principle in physics, i. e., that the distention of elastic bodies generates heat, and the endeavour to apply that principle to account for the production of the thermal properties of animals.

Lancet.

ON THE LATE EPIDEMIC DISEASES OF CATTLE, SHEEP, AND SWINE, IN LINCOLNSHIRE.

Compiled by W. YOUATT.

[Continued from page 391.]

MR. HUTTON, of Gate Barton, near Gainsborough, Lincolnshire, says that the epidemic of 1841 prevailed in all the farms adjoining to his, and among some yearling heifers, and spread through all his cattle excepting four, and nearly all his sheep and pigs. It first appeared during the fine weather in October. A communication probably took place between his cattle and some diseased ones, for a road very much frequented by drovers was close by the field containing his sheep. This is the only cause to which he can trace the disease, for his cattle had never been off his farm. They were yearling heifers, in good condition for breeding. These were first attacked, and the disease afterwards gradually spread to all the others. They were all affected in the mouth, and more than half of them in the foot. In sheep and pigs it was most prevalent in the feet, in cattle in the mouth.

As soon as they appeared to be attacked, aperient medicines, consisting of one pound of Epsom salts and two ounces of ginger, were given, and their mouths were washed, sometimes with strong salt and water, and at other times with a mixture of chloride of lime and water. When they got a little better, they were fed with boiled linseed and chopped hay and turnips and carrots. The sheep had smaller doses of medicine, but with no difference in the food.

Out of seventy beasts of all ages he lost a yearling steer, that was much affected in the head and eyes, and a sucking calf about ten days old. Out of 200 ewes he lost four, and out of 200 lamb-hogs five—out 200 ram-hogs none—out of a litter of eight pigs, seven weeks old, four—and, out of twelve older pigs, nine.

The milk invariably diminished for a time. In some it ceased altogether, but in the greater part it returned.

Pregnant females were not exempt from the disease. There was no case of abortion. One calf exhibited the disease at a week old, and died in three days.

The sheep were generally left very weak, and particularly the lamb-hogs. Among the cattle the milch cows suffered most, and the feeding bullocks the least.

The cattle got clear of it about Christmas, and the sheep could only be considered as recovered for a considerable period afterwards.

Mr. HENRY GRANTHAM, of Glandford Bridge, states that when the epidemic first appeared on his farm only one ox was affected by it, in the first week in September. There were three other beasts in the same field, none of which had it. The disease returned in the beginning of November, and every beast, with the exception of one, was affected. They were then taken into a strawyard, and all the pigs caught the distemper. Three of them died. When the disease appeared the second time, the cows had been driven into the village to milk, and might have met with other cattle. They first began to slaver. Then the tongue swelled, and the whole of the mouth and frequently the throat became so sore that a portion of the skin came off. None of his cattle had sore feet, but the sheep were exceedingly bad in their feet, and continued to be so.

When the beasts were ill and could not eat, they were daily fed with gruel made with powdered linseed cake. Each had also a dose of aperient medicine. None of them died.

Nine of the milk cows had the distemper, and a great many of the cattle belonging to the cottagers. A calf that sucked an infected cow had the disease. His cattle were not much reduced; but this he attributed to the care which he took of them, and feeding them so frequently with gruel.

Mr. JOHN WEST, of Melton Ross, near Glandford Bridge, had his cattle first attacked after they came into the fold in November, and it afterwards extended to every other kind of stock. He bought a hundred head of horned cattle at Caistor Michaelmas fair, which had been travelling for a fortnight before, and had no symptoms of the epidemic until a month afterwards. They had been kept on straw for a fortnight prior to the attack. Both cattle and sheep were affected. The horned cattle were not in the least diseased in the feet, but some of the sheep were in worse condition than when they were placed on turnips at Michaelmas. None of them have been affected a second time.

The udders of the cows were soon diseased, and the milk could not be used for a month.

The horned cattle were all spotted over like leopards after the complaint left them. They were not much reduced, but the sheep suffered greatly in their feet. Mr. West says, "We are about to begin the lambing season, and the ewes are every day breaking down. The consequence of this, I fear, will be a small show of lambs, and great losses in the ewes."

The wool was bad in quality, and short in quantity.

There were several horses ill, but that seemed to be the common distemper that is often prevalent among horses at this

season of the year. The epidemic continued for a long period, and particularly among the sheep."

MR. HENRY LISTER MAWS, of Crowle, near Bawtry, says that "about the middle of October 1841, he first became aware of this disease among his cattle; but two out of a litter of pigs died, and he was doubtful whether it was not from this distemper. With this exception it confined itself, at that time, to the cattle.

The weather had been clear previous to the cattle being really attacked. It afterwards became damp. Mr. Maws's cattle became infected by a tenant of Lord Manvers, who occupies some land of his lordship's, adjoining his, by putting diseased cattle that had been some time affected with distemper in an adjoining close, without giving us notice that he was about to do so, and so to put us on our guard. An old high hedge and ditch parted these closes. The cattle which had infected Mr. Maws's caught the infection at Epworth fair.

Most of our cattle were at grass, and in severe weather we house *all* our cattle at night. Some were nearly fat for the butcher—most of them in fair folding condition, and of all ages down to calves.

All ages appeared to take the disease, but perhaps some very young calves were the least liable.

A large milch cow was first noticed, and we almost supposed she had slipped her calf, which, however, she had not. From not being taken in time she got into a very bad state, and recovered, although she was much reduced. The disease first and mostly appeared in the mouth, but also in the feet, although not to the same extent.

We began to physic them. Our physic was simple but effectual. It consisted, for a full-grown beast, in a pound of salts, four ounces of sulphur, and an ounce of ginger. The mouth we washed with a solution of vitriol, or, sometimes, tar was applied to the feet. Gruel, bran-mashes, and hay were also employed, and, as they recovered, they were turned out to grass for a few hours.

We threw away all the milk until the cows were quite clear of the distemper, and most of them gave very little milk afterwards. Those that recovered were, generally, much reduced.

Four females slipped their foals under very different circumstances. The first was a half-bred mare, which was at the time attributed to her being rather over-worked.

The second was a carriage or half-bred mare, that had *not* been worked—running out during the day in fine weather, and taken up at night and in bad weather. I, at the time she slipped her

foal, was inclined to attribute it to want of sufficient exercise, and standing too long together in the stable.

The third was a thorough-bred brood mare, and the fourth a black farming mare.

The first was some months before the others, and stood in a different stable. The next two stood in the same stable, and the black mare in another stable.

I understand that several mares about this neighbourhood have slipped their foals, and I am now very much inclined to think that there is some connexion between their doing so and the cattle epidemic*. We have given some other mares a dose of aperient medicine with a view to prevent their slipping their foals†.

The epidemic lasted about five or six weeks, most of the cattle being ill three or four days before we were aware of the precise nature of the ailment. We gave salts as soon as we were satisfied about the nature of the complaint, a precaution which I believe had a beneficial effect.

May not the excessive wetness of that winter, and the effect produced on cattle by that wetness, have had something to do with this distemper? May not even the nature of the herbage have been affected by it? or may it not have been originally an atmospheric affection, acting most violently upon cattle predisposed from herbage, condition, &c., and these cattle so infected, infecting others by the offensive exhalation of their breath, &c.?

The bailiff of THE HONOURABLE CHAMPION DYMOKE, transmitted an interesting account of the epidemic. On the 28th of August, 1840, it commenced among 100 head of cattle, in Scrivelsby Coast Park, near Horncastle. In September it broke out among the sheep, the deer, the pigs, the poultry, and the young horses. The situation was well screened with wood, but rather damp. The cattle were out at grass—in good condition—of all ages—and might have taken the disease from cattle passing along the road.

White bladders appeared in the mouth, and the feet were affected on the following day.

In many cases the disease began to die away, but re-appeared in the course of a few days. The first attack was exceedingly severe, but the second was of a milder character. They

* Will some of our readers, and who are most extensively concerned in the breeding of cattle, take up this point? It is one of considerable importance.—Y.

† This is an interesting question.—Y.

were fed on hay during their illness, for during the first week or ten days the tongue was in a dreadfully inflamed state.

Opening medicine was given at first, but the disease was not relieved. Linseed meal and porridge answered much better. The feet were dipped in salt and tar.

One three-year-old colt was lost, but no other stock. Many of the cows lost their milk for a week, but it returned as usual. The milk of the diseased was sometimes given to the calves, and no harm followed.

It was very prevalent in the farms in our neighbourhood in the July of the second year, and violent in its attack. Many of the ewes lost their lambs, casting them before the proper time.

In September, 1840, the deer were much affected by this disease. They were lame and weak. Nothing, however, was done to them, and they all recovered.

The cows of HENRY B. BENSON, Esq., Utterly House, near Louth, on the 13th of Nov. 1840, first shewed symptoms of the epidemic, which extended to calves and other stock, with the exception of a bull, and two heifers suckling their calves. The cows were tied up, and attended by a veterinary surgeon. They were in good condition. Some had hay only, and others, hay and cut oats. The young ones had hay and linseed cake—their ages were various. The full-grown cattle seemed to suffer most.

The disease first appeared in the mouth, and only three out of thirty of the cows were affected in the feet. None were affected a second time.

One yearling heifer died twelve hours after drenching.

The milk diminished but afterwards returned. Those that were suckling their young were the only females exempt from disease.

Two cases of abortion occurred during the winter, and not one for seven years previously.

They were weak and poor after either mild or virulent attacks.

The disease began among the cows belonging to J. HARRIES, Esq., Thorganby Hall, North Lincoln, in October 1840. In November it attacked some Scotch bullocks, and extended to the sheep and pigs about the middle of December. The weather was rainy, with south and south-west winds. They had not travelled on any public road, but they were out of doors, in good condition, and living on grass. The sheep were not attacked until they were put on turnips. The cattle were all three-year-old beasts.

The first symptom of disease was a discharge of saliva from

the mouth—the back forming the segment of a circle, and there being lameness in both feet. It is very difficult for a non-medical person to distinguish between a second attack of disease and a relapse from an advanced state of recovery; but Mr. Harries imagines that there were many cases of sheep in his flock being affected a second time, and that with unusual severity. Not one of the cattle, however, exhibited this.

The patients were fed on turnips, or turnips and linseed cake, but no medicine was given, no good effect from it being observed in other cases. He applied tar to the feet, but, as it seemed to increase the inflammation, he did not continue it. No beast died, but about forty sheep out of a thousand were lost. They died very lean, but not generally discoloured. In some few cases, the matter was corrupted and black almost before the carcass was cold, and in such cases it was very offensive when skinned*.

The cows had the disease in a mitigated form. For some time the milk diminished, or could not be used; but, in about ten days, the milk was good, and almost as plentiful as before.

A flock of ewes in lamb, that were sent to turnips on the farm, suffered very considerably from abortion.

From mild attacks, the animals were only in a little degree the worse after recovery, but it was different in virulent cases. Mr. Harries had sixty feeding sheep that he feared would never become sound again, so he sent them to market by steam. They had lost about twelve or fourteen pounds each, and were still losing.

At the writing of this, Feb. 22, 1841, it still rages at Thorganby, as violently as ever. At Elkington it has disappeared, leaving many sheep very lame. The beasts at Thorganby recovered soon after Christmas. The few cows at Elkington, giving milk, have suffered, and still suffer much. Their udders inflame, and suppurate, and break, and spoil them for many weeks, so far as milking is concerned†.

Two cases from Spilsbury and its neighbourhood are considerably interesting.

The first belongs to Mr. W. B. WINGATE, of Hareby, near Bolingbroke. At the latter end of August 1841 the disease appeared among the shearling ewes that had been removed from

* I cannot but think that a very considerable number of these sheep might have been saved had proper means been adopted. One out of twenty-five are a great many to lose. His land must be very bad, and his sheep considerably neglected, or very faulty management pursued, if the mortality is so great as this.—Y.

† We are still more convinced that there is too much of the old school in Mr. Harries's treatment, and that the judicious management of proper medicines and dressings would effect some considerable change.—Y.

other parts of the farm, and which extended with more or less virulence to all kinds of stock kept on a breeding farm, except the cart-horses. His sheep had been on the farm with the other stock, but there was no chance of being affected by others. It was the same with young and full grown cattle. The symptoms were, excessive fever in the mouth, with lameness, and frequent gathering in the feet. A great number, both among sheep and cattle, were infected, and many of them a second time, but with less virulence.

Salt and water was given to the sheep, and their feet well rubbed with tar. This did not appear to have much effect. Nothing more was done than to keep the feet as well cleansed as the land will permit, and occasionally to apply the sheep ointment. He had never sustained any loss by death, except two or three small pigs. He had often seen the udder and the milk much diminished, and thrown away for ten days or a fortnight; but nothing of a more serious character. He had, at the time when this was written, a lot of heifers: some had calved, and some not; but they were all more or less affected, and a very distressing sight it was, being much wasted in flesh, and the calves also ill. One heifer was exceedingly constipated. He gave two or three strong purgatives. A calf was dropped, and, three days afterwards the disease appeared. When heifers recover from mild or virulent attacks, they are usually languid and weak for a considerable period.

The cattle of GEORGE BOURNE, Esq., of Hocton, near Spilsby, were attacked by the epidemic in May 1840. He was driving some half-bred oxen from the place where they had been tied in stalls all the winter. The weather was very hot, and the roads freshly laid at that time. They were kept apart from the others, and no other cattle had the diseases. His were the first beasts that were attacked in that neighbourhood. They were four years old.

Before they reached the termination of their journey they were crippled in all their feet, and had sore mouths. They were kept in a sheltered grass close, and were placed under the care of Mr. Clayworth, V.S., of Spilsby. Not an animal, however—sheep or cattle—was lost, nor any of the horses or cows seriously ill.

Mr. CHARLES HILL, of Winceley, near Horncastle, living on a hilly ground. A heifer calf was bought by him, and soon exhibited symptoms of the prevalent disease. It spread among the cattle and sheep, and the mouths and feet became diseased. Hay and straw and linseed cake were given, but no animals were lost. No disease occurred to the horses, although they fed with the

cattle during the whole of the time. The sheep continued lame for a considerable period after the cattle were all well.

Mr. W. T. A. BENTLEY, of Clay Bridge, near Lincoln, says that the disease broke out among his cattle on the 28th of September 1840. The fat stock were first affected, but after this it extended to the milch cows. They had not been out of the field, which is at some distance from any public road. They were nearly fat, and from three and a half to four years old. It did not affect any of the young stock. This is not a common circumstance. It commenced with discharge from the mouth, accompanied by a peculiar noise, and in the course of four or five hours lameness ensued. In three cases it appeared a second time. The first attack of the disease was particularly severe.

He had the animals housed, and gave to each half a pound of salt, a quarter of a pound of sulphur, one ounce of carbonate of soda, and a table-spoonful of turpentine. This was generally repeated on the third day. Their food consisted of hay and a small quantity of oil-cake. They generally recovered in four or five days. He had twenty-six affected; but they usually began to be better in four or five days—a remarkable instance of speedy recovery. In one instance abortion occurred. The milk was reduced to three-fourths of its natural quantity. They were all considerably reduced in condition.

In order to form some judgment of the effect of medical treatment, he left one of them out of doors. At the end of a month this animal was so reduced that he was compelled to take it up, and, although it had been allowed twelve pounds of oil-cake per day, besides Swedes and hay, it has scarcely yet recovered its former condition, and—the beginning of November—continues to be affected with slight lameness.

FRANCIS ROBINSON, Esq., of Frampton, near Boston, says that the disease first appeared in two beasts which he bought on April 24, 1840. They were ill of the complaint as soon as he got them home. This was probably caused by the hot and dry weather which then prevailed. It was a long time before they recovered. The sheep in the same pasture were not affected. The feet were first affected, and then the mouth. It became much more serious in the sheep than the cattle. None were affected a second time.

Physic was always administered, with a saline wash for the mouth: the feet were slightly pared, and dressed with sulphate of copper, alum and vinegar, or the common sheep salve. Very few died.

The milk was usually suspended, or thrown away for about ten days, and was then as good and as much as ever. It was once given to some pigs, and all of them became diseased.

The sheep became diseased on the 24th of December. They still remain very lame, and, whenever there is frost without snow, it so cripples them that they become worse again, and those who have not previously had it keep falling.

He has always found that, whenever stock have not got well scoured out by fruitful young grass in April and May, they have generally proved unhealthy some time during the forthcoming summer, particularly sheep during washing or shearing time. Sheep often swell after shearing, and especially when they have not been well physicked.

Mr. R. GREEN, of Skillington, near Grantham, says that the epidemic first appeared in the second week in April, 1840, among some cattle of the steer kind in the straw-yard, and afterwards the swine in the same yard, and ultimately among the sheep. They had been driven to a fair at Grantham, about eight miles, but returned unsold. The epidemic made its appearance on the third day after. Not a single case had been previously heard of in the neighbourhood, and they were quite well before they were taken to the fair. They had travelled along a public road, and had likewise stood intermixed with other cattle. They were in the straw-yard, with a good open shed to go under at discretion. They were in good condition, had been fed with four pounds of linseed cake per day and straw, and were about three years old.

It commenced by a foaming at the mouth, with a blistered tongue, on the third day, if we are to judge of them by their appearance and state.

The disease commenced in the mouth, but soon afterwards extended to the feet. They were chiefly of the heifer breed.

The milk soon became greatly diminished, but, afterwards, it fully returned. He had two cases in which the heifers calved about four weeks before the usual time. Some of the cattle had cutaneous eruptions about their legs, and nearly the whole became lousy after their recovery. Those who had it mildly thrived well afterwards, but the epidemic gradually spread through the whole of the flock, and remained about a month.

Mr. Green had two farms about ten miles distant from each other. The cattle on the farm on which he resided escaped it until the autumn, but all had it afterwards, and generally in a milder form, except some that he had purchased, which had been driven, and probably caught cold as well as the disease. The

total number that had it in both places was about seventy. Those at his residence had not been intermixed or very near to any that had the complaint, until after it broke out, as he refrained from buying in on account of being clear from it.

With regard to his sheep, who have all, or very nearly so, been diseased, he considered the complaint to have made great havock, not particularly in their absolutely dying, but in losing their flesh. A great many that were fat became quite lean, and so lame that it will be a long time before they recover, and this will not be until their hoofs are replaced by new ones. He has had about eight hundred affected by it.

Mr. J. C. BEASLEY, near Grantham, had a herd of cattle in good store condition, feeding on grass only. All were attacked by this disease, soreness of the mouth, and stiffness of the joints. It invariably shewed itself first in the mouth, and none of the cattle were affected a second time. He lost but one out of eighty, and that, he believes, was from taking cold after it had recovered from the disease. The milk diminished in quantity, and was useless at the time, but in all cases returned. With regard to abortion, he has had six premature births, but this did not much exceed the usual quantity. One calf had it so badly from a diseased mother, that he despaired of saving it for some time. None of the cows altogether escaped the disease. The cattle and sheep lost flesh considerably during the disease, but have now regained their health.

Mr. Beasley's steers were not attacked until they came into the yards at autumn. Cut chaff was given them, and half a pint of linseed oil twice in the day. They, in his opinion, recovered sooner, and with less loss of flesh than under any other regimen.

Mr. BRYAN MILLINGTON, of Asgaiby, near Sleaford, lives on a dry and moderately wooded farm, with a heavy loam sub-soil. Some infected cattle had passed along the road. His cattle were in good store condition. Ninety-two of them were diseased, and one only escaped. He was two years old, and the others from one month to twelve years. They were generally attacked in the feet first. This is not usually the case, but was so in the present instance. All of them were affected except the sucking calves, but none had the disease a second time. The sheep and cattle of some of his neighbours, however, did not escape the second attack.

Twelve of the heifers had a pound and a quarter of salts, three ounces of nitre, and three ounces of sulphur given to each, and, five days afterwards, a course of tonic drinks was commenced and

repeated every second day. The other eighty had no medicine, and recovered much quicker. Generally speaking, the disease was severe in proportion to the age of the beast. Not one of his whole stock was lost.

The milk, which in most of them was diminished in quantity, returned, but not in its full quantity. Not one, however, became quite dry.

Abortion was sadly frequent. Out of nineteen cows, five aborted at about nineteen weeks. The nostrils and mouths of the calves were occasionally very sore.

Immediately after the disease the animals appeared somewhat debilitated, but they afterwards rapidly improved in condition.

The epidemic disappeared as to cattle in September, but continued occasionally to shew itself through December.

The reason why he had so many bad in so short a time was that he turned them together for the purpose of their having it, and becoming stronger for winter. He should do this again if it became general next year, as his beasts are all strong and healthy at this time.

Mr. JOHNSON SNOW, Evendon, states that it appeared in July 1840, beginning with an aged bull, and running through the whole of his feeding stock. He had at the same time thirteen heifers in an adjoining field, only parted from each other by an iron fence, and frequently getting together, not one of which caught the epidemic. It generally began in his own farm and on those of his neighbours when the wind was in the east. None of them had been outside his gates, but were in good condition, and fully grown. They were affected in the mouth and feet, and in both at the same time. Three or four had it a second time, but under a mitigated form. The first attack was always the severest.

As soon as he found any one affected he removed him from the pasture, and gave him salts, sulphur, linseed oil, and ginger, mixed with oatmeal gruel. Not one died. The quantity of milk was greatly diminished, even when the udder did not appear to be affected. The calves, when weaning, were affected at all ages, and the whole of the calves when sucking infected cows.

In the next month this subject will be resumed, and we shall be thankful to receive any account of the epidemic in 1840, or that which is at present so destructive. The epidemic now raging, and so strangely destructive, deserves the most serious consideration.

COMPTE-RENDU OF THE PROCEEDINGS OF THE VETERINARY SCHOOL AT ALFORT.

[Continued from page 152.]

THE CHAIR OF PATHOLOGY, THERAPEUTICS, AND MEDICINE,

PROFESSOR M. DELAFOND.

THIS talented Professor has occupied himself on a question of legal medicine, which gave rise to some long and important discussions in the Royal Academy of Medicine. The question agitated was, whether the kidneys of animals secreted urine during acute empoisonment with arsenious acid, as M. Orfila had maintained, or whether the urinary secretion was no longer carried on, as MM. Flandin and Danger asserted. M. Delafond has endeavoured to resolve this question by large doses of arsenious acid being given to some horses and dogs. The numerous experiments to which this Professor had recourse have been satisfactory, in his opinion, that the secretion in acute arsenious empoisonment is not suppressed, but merely diminished—that the urine, naturally expelled, runs from the bladder during life, or is collected in it after death, and that the apparatus of Marsh always exhibits certain portions of arsenic in a state of purity. From these results, M. Delafond thinks that he is justified in concluding that in the acute empoisonment of animals by arsenic, it will always be possible to discover this violent poison, and to detect the criminal by the method of proceeding by Orfila, or by the apparatus of Marsh.

The same Professor is occupied in bringing to perfection an instrument to put to the test the physical properties of the blood, and to which he has given the name of the *hématomètre*. It consists of three probes, an *aréomètre* and a *thermomètre*. The apparatus is, however, very portable, and the blood collected in any proper vessel, after its coagulation may be carried to a considerable distance without injuring the expulsion of the serum from the interior of the clot.

In concert with MM. Andral and Gavarret, M. Delafond has been employed in a *quantitative* analysis of the organic elements of the blood in all kinds of domestic animals, in a state of health or disease. It resulted from the analysis of the blood in nearly 200 bleedings, that that of young pigs of the Anglo-Chinese race contains most fibrin, and the blood of the dog the least.

The blood of the dog contains the greatest quantity of globules, and that of cattle the fewest.

The quantity of water in the blood varies from 774 to 813 out of 1000 drops of blood.

The mean quantity of the solid materials of the serum varies from 75 to 92 in every thousand parts of blood.

The power of the constitution and substantial nourishment produce, in different individuals of the same species, a very appreciable difference in the figure and number of the globules.

Circumstances of an opposite character have an opposite effect on the globules.

As to an analysis of blood in a state of disease, the following were the results that were obtained:—

In the process of inflammation, the quantity of fibrine increases in variable proportions according to the situation and intensity of the disease. A diminution of the globules was remarked in all consumptive diseases. It was particularly so in the rot in sheep. When sheep died of the rot, the fœtus usually presented the peculiar lesions of peripneumony.

In the lungs of ten fœtuses that had undergone abortion, the cows having been attacked with chronic pneumonia, there were several spots: in one lung or both there were numerous red, hard lobules, easily torn, and which already constituted little lobular patches of pneumonia, in an acute state.

In seventeen cases the cattle were destroyed on account of their being attacked by incurable chronic pneumonia, the lungs of the fœtus were hepatized, grey, and tuberculous. Twelve of them had lobular pneumonia, presenting all the characters of sub-acute disease.

Of twenty-five calves, from fifteen days to two months old, coming from cows labouring under sub-acute partial peripneumony, during life or after death, ten were affected by sub-acute peripneumony, and died, after an illness of from twenty to forty days. Eight having been opened, enabled us to trace the chronic state of the disease. The other seventeen were either sold or lost sight of.

These facts, although few in number, yet satisfactorily shew that cows attacked by chronic pneumonia may transmit the disease to the fœtus; and that the calves born from cows attacked by this malady may probably have the germs of the evil, or a disposition to contract it soon after they have commenced their extra-uterine life.

CHAIR OF CHEMISTRY.

The reactions which many of the immediate principles of animal and vegetable substances exercise on a certain number of salts and metallic oxydes, have, during the last year, been the

object of research by M. Lassaigne. Of these we have only time and room to glance at the decomposing action of chlorine on a solution of ioduret of potassium, a new chlorometrique procedure, simple and exact, and which he proposes to submit to the judgment of the Academy of Sciences. This procedure, which has been employed under different circumstances, will enable us to judge of the proportions of chlorine in the solutions of the hypochlorites, so much employed in the arts and in medicine. M. Lassaigne has published a new edition of his useful *Abrégé Elémentaire de Chimie*.

The Under-secretary of Agriculture and Commerce, M. Camille Paganel, next addressed the meeting. He complimented the Professors on the rapid improvement of their school, and the increasing value of the institution over which he presided. Their profession was connected with the grand interests of the country; and happy was he to perceive how deeply they were impressed with this, and how zealously they were employing themselves in the important concerns over which they presided.

M. Rigot, the professor of anatomy and physiology, expressed the feelings of himself and his brethren. "The solemnity," said he, "which brings us together to-day has not only for its object the recompense of merit in proclaiming it to the public, but it furnishes an opportunity to the officers of the school to render an account of the labours in which they have been engaged, and to give some useful advice to those with whom they have been labouring, and with many of whom they are now about to part.

First, I would address myself to those who have not yet terminated their studies. Far from discouraging you by hinting that there yet remains much for you to do before you will attain the object at which you are aiming, I would say, redouble your activity and perseverance. If you meet with obstacles in the course of your future studies, remember that it is not a few difficulties, however great they may at first appear to be, that should conquer a determination, seriously reflected on, to labour methodically in overcoming the obstacles that present themselves. Under the influence of your first efforts, your intellectual faculties will develop, and enlarge, and perfect themselves, and be accustomed, by little and little, to the objects about which they must habitually be exercised.

To diminish, and often to conquer, the greater part of these difficulties, there is, as you well know, an artifice, if I may so term it, in the study of the sciences, to which the highest degree of intelligence is often indebted for its legitimate and durable success;—that artifice is *method*, which exercises the mind without fatiguing it. By the aid of that method, gentlemen, the mind seizes, without pain, the various facts, even the most complex ones,

of which science is composed. It chains them together, or it separates them. It deduces their importance, absolute and relative; and assigns them a philosophic order, which removes all fatigue from the memory, and the intelligence from all embarrassment.

Let the recompence which is now about to be decreed to merit, in this your solemn festival, inspire you more decidedly with the love of science and the love of improvement, which develop the intellect and aggrandize the mind. Let there be for all a powerful encouragement, and for those that are about to receive them a happy presage of services often eminent, and always useful, which science and society have a right to expect from them.

As for you, gentlemen, who have completed the term of your studies, and before whom, consequently, a new and difficult career is about to open, I would say, beware that the honours which you have won to-day do not lead you to imagine that you can dispense with study. On the contrary, know that, in quitting this school, you carry with you, so to say, only a fund of precepts, the application of which demands, without ceasing on your part, new studies. Have it always present in your mind, that medicine, of the study of which you have as yet only in some sort commenced the prelude, is a science entirely of deduction, and that observation is the only school in which she can be really understood and carried to perfection. That it is, in consequence of observation, the mother of all the natural sciences; or, in other words, attention is incessantly fixed on a tablet so mobile as that of nature and so various in all its manifestation. Here it is full of health, and acting with vigour; in another place it is diseased, or succumbing under the influence of a morbid agent; then, acting in the full plenitude of its power, the art of healing again assumes all its certainty, and makes its assured progress. Carefully observe the organic affections so numerous under the different relations of their nature, their duration, their termination, their mode of action, the means used to combat them, for these constitute the commencement, the centre, and the termination of medicine.

Such are the grand and important truths towards which your studies should be constantly directed, if you would obtain in the practice of the medical art the success that will assure you the public confidence, and contribute to the advancement of science, and do honour to your instructors, and attest the increasing worth of those invaluable institutions in which you have been educated, and to which you are so deeply indebted.

They also, who are eager to understand the truth, often closely examine, and, for awhile, doubt. The truth in almost every

science, but especially in medicine, rarely discovers itself at the first glance. Generally, the search is long before we discover it; and if it sometimes escapes us, it is because we have not bestowed sufficient attention on the object before us, or there has been some fault in our method of observation, or we have neglected some phenomena so small, or so fugitive, that they were not perceived. Recollect also that, in order to observe with truth and accuracy, we should have no obstinate preconceived opinions, for the spirit of system is too often directly opposed to that of observation.

The spirit of system makes us see many things utterly opposed to that which really exists; it perverts facts, instead of inquiring into them; it mutilates, instead of admiring and perfecting them. It lends itself to views more or less ingenious, but that are almost always false; it makes all his facts bow to theory.

Then observe faithfully the circumstances that occur. Form no conclusion until you have long and attentively examined them. You must have deliberately reflected, if you wish to be concerned in hastening the progress of a science scarcely freed from the trammels of empiricism, in which it has been so long enveloped, and to distinguish yourselves from visionary and pretended observers, who disdain the pure and simple study of nature.

Carefully guard yourselves against those who are eager to reform the language of science—who would change many a mode of speaking, consecrated by time and usage—whose modes of expression are unexact, and almost always incomplete. Doubtless there are many happy innovations in our medical dialect, and which the progress of science demands. There are many new facts to be classed in our memories, many new words to be, as it were, coined; but we must continue to respect those whose only fault is that they are too simple or too old.

We must not, however, forget the numerous and important relations which connect together veterinary medicine and agriculture, and which give to a state its power, its riches, and its life.

Be persuaded, Gentlemen, that by devoting ourselves to the medical treatment of our cattle by ameliorating and multiplying those valuable animals who lend us all their strength—who till our land, and enrich it with their manure, and nourish us with their flesh, and cover us with their hides, we are continuing to augment the private and public patrimony—to benefit society generally, and promote the prosperity of our beautiful country, at the same time that we worthily respond to the wishes of a liberal government, that has gratuitously supplied—the greatest want of man—instruction, and who has only demanded as the

price of so great a benefit, that you will second, to the best of your power, the progress of agricultural improvement.

Favour then, by every means in your power, the progressive movement, impressed by government on all the branches of rural economy, and especially that which has for its object the improvement of the principal species of domestic animals, and a love of them.

Let it then be everywhere understood, that the constant care and judicious management of the farmer can do much for the amelioration of the breeds of cattle. The beauties as well as the imperfections of our cattle and sheep are dependent on the management of the farmer. He has the power of adding to the excellencies or the defects of the flock, and this is principally effected by judicious crossing.

Already—thanks to the more precise and the more generally expanded notions that are enforced on the mind of the pupil with regard to the different species of domestic animals, and thanks also to the efforts of government, which encourage so powerfully this important branch of rural economy—we begin to see, in our marshes and in our hippodromes, animals that recompense those who breed them. Already the produce of our stables and our sheepfolds are the objects of commerce, and offer to a more refined species of industry many valuable materials, abundant and varied.

Let these considerations inspire in you, more and more, a love of that useful art, the early precepts of which have been imbibed in this school; and also produce in you the ambition of possessing that high esteem and unlimited confidence which society will accord to those only who render themselves worthy of it by the variety and extent of their professional knowledge and acquirements.”

ON THE CAUSES AND SPREAD OF INFLUENZA.

By HERR TETZLAFF, V.S., Bärenklau.

AFTER many years' close and attentive observation of this disease, I am persuaded that it is contagious, and chiefly prevalent during the autumns succeeding to cold wet summers, or at times when the electricity of the atmosphere causes the formation of thick fogs. It rages most in stables where many horses are kept together. Young horses, from three to six years old, are more liable to its attacks than old ones, but the latter do not wholly

escape. Very strong constitutioned animals, and such as have no predisposition to this disease, are spared.

Traces or isolated appearances of this disease are to be met with at all seasons, but chiefly in autumn, and then it principally attacks horses that, from some cause or other, have been very much confined to their stables. I do not mean to say that those which are only brought into the stable at night, or even those which are left out in the meadows, escape; for such is not the case, although instances of horses that live constantly in the open air being attacked with influenza are rarely heard of.

I have seen this disease prevail to a frightful extent among cavalry horses while in the barracks or dépôts, but it rarely appears among troops while on the march, or among those horses in barracks that are regularly turned out during a certain portion of the day. It is only where a great number of horses are confined together in stables, from morning until night, that its ravages are so fearful.

The air in such stables becomes heavy with animal emanations, especially where the horses are only taken out for a short period now and then. In such stables there is seldom any means of obtaining a regular change of air, and the animals constantly inhale the floating miasm, and its poisonous influence becomes manifest in the development of influenza.

In the beginning of Oct. 1841, seventy-six cavalry horses were delivered at the barrack dépôt, at Bärenklau, where the influenza was at that time raging frightfully. There were three troops then at the dépôt, and among these the horses were equally divided, twenty-six being reserved for Bärenklau. These latter were turned into a large meadow a quarter of a mile distant from the winter quarters, and were there treated exactly the same as the animals which had been previously there. Although only fourteen days before, the disease had broken out among the numerous horses assembled there, and even spread to the winter quarters, and the straw-yard, and attacked sixteen ponies which stood in a dark stable—notwithstanding all this, these twenty-six cavalry horses escaped, while those divided among the troops, and the greater part of those which had been there previously, suffered severely from influenza. What is still more remarkable is, that at the same time no other horse was suffering from influenza in the whole of the neighbourhood; hence the disease could not have been brought into the dépôt in that manner, and must have arisen from the inhalation of the miasm of which I have before spoken, and which I consider to be one of the chief predisposing and inducing causes of influenza.

Magasin für die gesammte Thierheilkunde, 1843, p. 207.

A CASE OF OBSTRUCTION IN THE BOWELS OF A YOUNG FOAL BY OVER-HEATED MILK.

By Mr. G. CLELAND, Rosewell, Yorkshire.

I WAS called upon this afternoon to see a colt foal, the property of Mrs. Leslie Cumming. The mare being kept in a considerable time after foaling, when she was put into the field, she went off at a fast pace, and continued galloping until she was covered with perspiration, and the foal was in pursuit a little after the mare. There almost immediately afterwards came on a very heavy shower of rain, and it was with difficulty the mare could be got into the loose box again. After the groom had got her in, he waited a little, to see if the foal was any thing the worse. Shortly after sucking, he lay down and trembled all over. I was then sent for.

I gave him 1 ounce of castor oil, and 60 drops of tinct. opii. He settled well, and then got up, and walked round his mother several times, and sucked at both sides; but still seemed a little uneasy.

I visited him on the next morning, when the servant told me that Mrs. Leslie wished a veterinary surgeon from Edinburgh, and that I was to discontinue my treatment until the gentleman referred to should see the foal; so I waited until Mr. Gray, jun. arrived.

By the time Mr. G. reached Springfield, the foal was a great deal worse, and the purging rather increased. Mr. Gray ordered the servant to bring out a strong dose of well boiled starch and a tea-spoon. He (Mr. G.) gave the foal three tea-spoonfuls, and ordered it to be continued every two hours, and clysters to be employed.

I remained until nine o'clock at night, and told the servants it was of no use for me staying, as they could administer the starch and gruel as well as I could; so I went home. Shortly after I got home, Mrs. Leslie sent a message to me, wishing me to stay with the foal, and to wait upon it all night.

Early on the next morning the lady sent down to see how the foal was. I told the servant to let her know that Mr. Gray's treatment was contrary to that which I should have pursued—that the animal was worse, and, from all appearance, in a sinking state. Word was then sent down to me to treat the foal as I thought proper. I then ordered some port wine, and gave it a half glassful with a little well boiled gruel, two drachms of rhubarb finely

powdered, and ʒi of magnesia. At this time he was blowing hard, and panting very much at the sides; in short, I thought that it was all over with him.

A little after he got his medicine, he appeared to be easier—the shivering abated greatly—the purging was much the same, with a very bad smell.

I continued my treatment with the rhubarb, wine, magnesia, and gruel, and also the clysters of gruel and soap and water every two hours, both night and day. Three days now passed, and he would not suck.

On the 16th he passed two large balls; on the 17th several more; and on the 18th he passed a few small ones.

This day Sir James Boswell called to see the foal, and inquired of me how I was treating him. Sir James was much pleased with my way of treatment.

After the small balls came away on the 18th, the foal got perfectly well, and all those who saw him said he was a living wonder.

In the time of his illness I called upon a Mr. Falconer, a veterinary surgeon. I told him all about the case, and Mr. Gray's treatment. He said Mr. G.'s treatment was right, and advised me to give ʒi of catechu now and then, with the starch, in order to stop the purging. I told Mr. F. that they were both wrong in their way of treatment, and if Mr. G.'s treatment had been continued another day, I believed that the foal would have died.

I have had many cases similar to this; and, with the same kind of treatment I have always been very successful, except when it was too long before they underwent the proper treatment. Those that died I always made a point of opening, and I found balls in them, similar to what I have described in this case. Those gentlemen who breed fine stock would find this mode of treatment of benefit to them in such like cases.

I am, &c.

P.S. We must turn Mr. Cleland over to Messrs. Gray and Falconer; and if their remarks should be a little severe, he must recollect that he somewhat unnecessarily exposed himself to them.

ED.

REMEDY FOR HYDROPHOBIA.

By DR. ASMUS.

THE history of the remedy is as follows. The Thömer family at Stolp possessed the receipt as long as any one could recollect, and distributed the medicine. Chemical examination did not succeed in discovering its composition. Often as it had been used, no case was known where hydrophobia had appeared after its employment, not even when the first symptoms had indubitably begun to manifest themselves. The directions are, that the person bitten is to swallow three times as much of the powder as can be taken up with the point of a knife, for three days running, in the morning. It is to be taken fasting and in warm beer, and the patient is to wait till perspiration comes on. No particular diet is required, nor scarifying or cauterizing of the wound. Many respectable persons pledge themselves to the unusual efficacy of this remedy, which was communicated to Dr. Asmus by the last Thömer. Its composition is as follows:—

℞ Lap. Cancror. ppt.; Pulv. rad. Gent. rubr. āā ʒij.; Bol. rubr. ʒj.; Gummi myrrhæ. ʒss. M. ft. pulv. subtilissimus.

Med. Zeit. and Schmiat's Jahrbücher.

THE VETERINARIAN, OCTOBER 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THERE are those still among us in the profession—and long may they remain among us—old enough to remember the rise, or rather the institution of the veterinary art on a scientific basis, and to these persons the retrospect must prove a highly gratifying one, to contemplate how our too-long-neglected art has risen all at once, as it were, and rapidly progressed to the state in which we at the present day have the pleasure to behold it. This must be still more gratifying to those few who feel conscious of

having lent a helping hand in the praiseworthy undertaking. Contrast the irrational and too often cruel practice of the farrier with the humane and scientific management adopted by the veterinary surgeon. Reflect upon the horrible cases resulting from such mistreatment—cases such as grease up to the very hocks, canker eating off the hoofs, quittor ending in monstrous deformity, and anchylosis, fistula and poll-evil, laying the horse up so long that a pistol-bullet was in numberless instances resorted to rather than encounter a process of “cure.” Let those old enough to remember what the veterinary management was of public and private establishments look into similar establishments at the present day, and say what improvements have therein taken place in consequence of the rise and spread of veterinary science. Improved, however, as our art is, and great as can be shewn to be the advantages everywhere in the animal world derivable therefrom, it would be the height of presumption and folly in us to suppose we have yet acquired any point approaching perfection in our craft. What we have achieved has been effected with comparative ease. Our grand difficulties remain yet to be surmounted, and until they have been overcome, we must not boast much about our skill. When we shall behold glanders, and farcy, and periodic ophthalmia, and two or three other formidable diseases—at present a reproach to us—vanishing at the sight of our prescriptions; when we shall have so modified the blacksmith’s labour that a shoe shall be made that will neither fetter nor cramp the horse’s foot; when we shall have developed the causes of, and devised remedies for, lameness of whatsoever kind it may be, then indeed, but not till then, we may begin to talk about the *perfection* of our art. We have done something, it is true; but we have much—a great deal more—yet to accomplish.

Found, as our art was, in the hands of men working without a single principle to direct them—men who, traditionally, had set up for menders and repairers of machines of whose mechanism and operation they knew nothing—to one acquainted with the structure and functions of an animal body, the task of reform on the basis of science, became at once an easy and a pleasant one. Human medicine had chalked out the road, and the prosecutor of the veterinary had but to pursue it, with such occasional

deviations as the animal body directed in comparison with the human. This work Professor Coleman well and quickly performed. With the besom of medical science he unsparingly swept away all the hotch potch with which he found the wheels of improvement clogged ; and though, in his hurry to get rid of the rubbish, he on many occasions ejected that which he was forced at some future time to receive back again, yet in this manner did he accomplish a much quicker reform than would have been effected by one disposed to sift more narrowly the old materials. Thus was veterinary medicine in a short time invested with much of the "art and mystery" of human surgery ; and thus it was that the veterinary practitioner found himself so soon placed alongside of the surgeon. Coleman was bred a surgeon. On surgical principles he framed and taught the veterinary art ; and though, from want of practical horse-knowledge, he ran into all sorts of occasional errors, yet in the main he was right, and ultimately completely established the art he professed upon the ground-work of science. Both the farrier and groom would often laugh at his new-fangled doctrines, and on some occasions would, on account of their erroneous tendency *in practice*, do so with reason : the Professor, however, was too good a tactician to suffer these little exceptions to the general rules to dismay him, and possessed too keen a knowledge of physiology not speedily to turn them to his own account.

When once a scientific turn had been given to it, the progress of the veterinary art became rapid and uninterrupted. Moorcroft, Blaine, Peall, Clarke, and others, were engaged in the good cause ; and those who came to the College as pupils were no sooner transformed into veterinary surgeons than they, in their turn, became contributors to the general stock of knowledge. Every one felt desirous to make some "discovery ;" and though then, as now, a great many discoveries and inventions were produced that had been made in ages preceding by men silent in their tombs, still the thirst for innovation did good, either in bringing something before the public that really was *new*, or in preserving something from oblivion that really was *old*.

There were two subjects to which Coleman paid especial at-

tention—the foot and the eye. The latter of these, indeed, had always been such a favourite with him, that, had he remained a surgeon, it is more than probable he would have practised as an oculist. Neither field of inquiry, however, turned out of much profit. None of the horseshoes he invented proved of any service. Shoeing, in spite of the alterations he attempted, reverted back to what it was before; and as for the eye, cataract proved unrelievable by operation, and periodic ophthalmia resisted every medicine, external and internal, and every operation, he could bring to bear against it.

One of the Professor's projects, however, was crowned with signal success; and for this his name must be handed down to posterity with no ordinary *eclât*—I mean his introduction of VENTILATION into stables and other places used as the habitations of horses and cattle. Before his time it was the practice of grooms—stud-grooms and trainers, *et hoc omne genus*—with a view of keeping their horses as warm as possible by the exclusion of air, to close up every chink and cranny through the wall or boarding of the stable, not omitting even the key-hole. Newmarket was renowned for this *close-stopping*; and Newmarket proved the last to admit that the respiration of pure air had any thing to do with the health of race-horses. The first to assent to the Professor's new doctrine were the cavalry—Mr. Coleman being at that time the principal army veterinary surgeon, any recommendation of the kind from him became tantamount to an order. Accordingly, ventilation was adopted by way of experiment; and such were the favourable reports made concerning it, that it was not long before the whole of the cavalry stables in Great Britain were ordered to undergo the necessary alterations; and this order Mr. Coleman himself was directed by the commander-in-chief to see carried into proper execution. From the army, ventilation spread to the stables of gentlemen keeping their hunters or pleasure horses; and, afterwards, it found its way into the stables of coach and post and job masters, who all discovered it to their interest to adopt the Colemanian air-holes. Last of all, as was said before, it having, in the mean time, obtained a strong current, ventilation blew the stoppings out of the chinks and cracks and key-holes of racing stables. For a long while its inveterate enemies, the

stud-grooms and trainers, contended it was impossible horses could "look well in their coats," or "be healthy," or "got into condition," in ventilated stables; a plausible sort of reasoning which, for too long, told with their employers. In time, however, the light of truth, as it is always sure to do, burst forth with effulgence too strong to be resisted, and even the bastilles of Newmarket were perforated for the purpose of admitting air that was fit to respire, and of emitting air that was not. So Coleman, upon his favourite hobby—though he did, at times, most unmercifully over-ride him—eventually proved triumphant, beating, sooner or later, every one of his opponents, Newmarket not excepted, fairly out of the field. P.

THE DOG.

Next to the human being, this animal ranks highest in the scale of intelligence, and was evidently designed to be the companion and the friend of man. We exact the services of other animals, and, the task being performed, we dismiss them to their accustomed food and rest: but several of the varieties of the dog follow us to our home; they are connected with many of our pleasures and our wants, and they guard our sleeping hours.

From the earliest known history he was the protector of the habitation of the human being. At the feet of the lares,—those household deities who were supposed to protect the abodes of men,—the figure of a barking dog was frequently seen. In every age, and almost in every part of the globe, he has been connected with the labours, the dangers, and the pleasures of the chace.

In process of time man began to surround himself with many servants from among the lower animals, yet he had but one friend—the dog; one animal only whose service was voluntary, and who was susceptible of disinterested affection and gratitude. In every country and in every time there has existed between man and the dog a connexion different from that which is observed between him and any other animal. The ox and the

sheep submit to one controul, but their affections are principally, if not solely, confined to themselves. They submit to us ; but they can rarely be said to love or even to recognize us, except as connected with the supply of their wants.

The horse will share some of our pleasures. He enjoys the chace as much as does his rider ; and, when contending for victory on the course, he feels the full influence of emulation. Remembering the pleasure he has experienced with his master, or the daily supply of food from the hands of the groom, he sometimes exhibits evident tokens of recognition ; but this is founded on a selfish principle—he neighs that he may be fed, and his affections are easily transferred.

The dog is the only animal that is capable of disinterested affection. He is the only one that regards the human being as his companion, and follows him as his friend ; the only one that seems to possess a natural desire to be useful to man, or, from a spontaneous impulse, attaches himself to him. We take the bridle from the mouth of the horse, and turn him free into the pasture, and he testifies his joy in his partially recovered liberty. We exact from the dog the service that is required of him, and he still follows us. He solicits to be continued as our companion and our friend, and by many an expressive action tells us how much he is pleased and thankful. He shares in our abundance, and he is content with the scantiest and most humble fare. He loves us while living, and has been known to pine away on the grave of his master.

As an animal of draught the dog is highly useful in some countries. What would become of the inhabitants of the northern regions if the dog was not harnessed to the sledge, and the Laplander, and the Greenlander, and he of Kamtschatka drawn, and not unfrequently at the rate of nearly a hundred miles a day, over the snowy wastes ? In Newfoundland the timber, one of the most important articles of commerce, is drawn to the water side by the docile but ill-used dog : and we need only to cross the British Channel in order to see how useful, and, generally speaking, how happy a beast of draught the dog can be.

If in our country, and to its great disgrace, this employment of the dog has been accompanied by such wanton and shameful

cruelty that the magistracy—somewhat hastily confounding the abuse of a thing with its legitimate purpose—forbad the appearance of the dog-cart in the metropolitan districts, and were inclined to extend this prohibition through the whole kingdom, it is much to be desired that a kindlier and better feeling may gradually prevail, and that this animal, humanely treated, may return to the discharge of the services of which nature has rendered him capable, and which he is never happier than when discharging to the best of his power.

In another and very important particular, as the preserver of human life, the history of the dog will be most interesting. The writer of this work has seen a Newfoundland dog that on five distinct occasions preserved the life of a human being; and it is said of the noble quadruped whose remains constitute one of the most interesting specimens in the museum of Berne, that forty persons were rescued by him from impending destruction.

When this friend and servant of man dies, he does not, or may not, cease to be useful, for in many countries, and to a far greater extent than is generally imagined, his skin is used for gloves or leggings, mats or hammer-cloths; and while even the Romans occasionally fattened him for the table, and esteemed his flesh a dainty, many thousands of people in Asia, Africa, and America now breed him expressly for food.

Then if the publication of the present work should throw some additional light on the good qualities of this noble animal—if it should enable us to derive more advantage from the services that he can render—to train him more expeditiously and fully for the discharge of those services—to protect him from the abuses to which he is exposed, and to mitigate or remove some of the diseases which his connexion with man has entailed upon him—if any of these purposes are accomplished, we shall derive considerable “useful knowledge,” as well as pleasure from the perusal of his history.

Y.

DIFFERENCES IN THE EFFECTS OF ABSTRACTING ARTERIAL AND VENOUS BLOOD.

By Mr. WARDROP.

THE abstraction of blood is employed as a remedial means, either for the purpose of diminishing the action of the heart and arteries in inflammatory diseases, or for the removal of a surplus quantity of the sanguineous fluid, whether venous or arterial, in particular organs wherein there is what has been called "plethora," or a congestion of that fluid. A quantity of blood may also be abstracted in some diseases where the qualities of the body have become changed; but, whatever explanation may be given of the effects of blood-letting, there is no doubt of its multiplied results in the treatment of disease, whether the fluid be removed from the system by art or by a "spontaneous hemorrhage."

Blood may be abstracted either from the *venous* or from the *arterial system*; but I am not aware that much attention has been paid to distinguish the difference of the effects that are produced on the system by taking blood from an artery and from a vein, though it can readily be conceived that such difference may be considerable. The chief reason which is usually given for opening arteries in preference to veins has been, that the blood may be obtained more directly from a particular part, and in larger quantity, and more promptly, than it would be by opening a vein: but as almost the only vessel on which arteriotomy has been performed is the temporal artery we know little of the effects of abstracting arterial blood, except when it has been taken from that vessel. The result of my own experience has been unfavourable to arteriotomy; having found that the inflammatory symptoms recur much more frequently after a certain quantity of blood has been removed from an artery than if an equal quantity have been taken from a vein in the arm; and I know that this observation coincides with the experience of some others.

There are, however, cases where the difficulty or even impossibility of procuring the requisite quantity of blood from a vein renders arteriotomy an indispensable and important operation for the abstraction of blood.

A little reflection on these two modes of bleeding may, to a certain degree, explain how this difference of effect is produced.

When blood is abstracted from an artery there must be an immediate diminution in the supply of blood to the part nourished by that artery; but such is the vigour of the anastomosing branches, that the supply of blood thus cut off is very quickly

restored. It is not so if a vein be opened, for it does not necessarily follow that the *arteries* of a part increase in activity in order to supply the blood abstracted from the *vein*. Both these facts are confirmed by observation. If one of the carotid arteries be tied, almost immediately the temporal and occipital branches of the carotid of the opposite side may be distinguished through the integuments, dilating themselves, becoming tortuous, and struggling, as it were, to circulate an additional quantity of blood.

I was first led to remark this in the case of a child, on whose carotid artery I had placed a ligature for the cure of a large *nævus* on the cheek. Almost immediately after the operation, I observed the arteries from the opposite side of the head enlarging, increasing in their action, becoming tortuous, and actively employed in supplying the place of those vessels whose channels had been obstructed. Indeed, it was the knowledge of this power in the anastomosing branches, when a trunk is obliterated, that led Hunter to perform the "high operation," as it is called, for popliteal aneurism. The same phenomenon is exhibited in the eye. If an artery on the sclerotic conjunctiva, passing into a speck on the cornea, be divided, immediately vessels will be perceived, stretching across the cornea from the opposite side, to supply the place of the vessel which was divided.

The whole arterial system, by a wise provision of nature, whenever the supply of blood to one part is diminished, makes an effort to throw blood by another to the part which has been deprived of its natural quantity, and thus the action of the heart and arteries must be more or less injured; whereas the abstraction of blood from a vein is followed by no such increased action of the arterial system,—there is no local diminution in the supply of arterial blood,—no effort made by the arteries to supply the place of the venous blood which has been removed. On the contrary, a diminution in the supply of blood to the heart by the veins will, as I have just observed, have the effect of diminishing the vigour of the heart's action, and also that of all the arterial system.

The effects of opening the temporal artery in puriform ophthalmia may be instanced, as well illustrating the difference between arterial and venous depletion for the cure of inflammation. An eye injected with red vessels will be suddenly relieved by opening the temporal artery, and the conjunctiva will become quite pale, inducing one to suppose that the inflammation is subdued. But I have generally found that, sooner or later, even in a few hours, the inflammation has returned; and I think others, particularly Dr. Veitch, have made the same remark.

Whereas, when, in that disease, a vein in the arm is opened, and blood is taken to the full extent, the good effects of such depletion are permanent.

This is, therefore, a distinct and important difference between the changes that take place in the action of the vessels of a part, when blood has been taken from an artery and from a vein, and it explains the difference which I have always found in the employment of those two different modes of abstracting blood. It is also extremely probable, that there must be a difference of effect from the kind of blood which is taken away,—that the removal of a pint of arterial blood will produce a different effect on the system from the removal of the same quantity of venous blood. What these differences are I do not pretend to know; but one proof that the abstraction of venous blood is the most useful in the cure of disease is, that in those natural or “spontaneous hemorrhages” which are so salutary, such as those from the nose and hemorrhoidal vessels, the blood which is discharged appears to be chiefly venous. Where leeches and cupping are had recourse to, it no doubt happens that they remove both arterial and venous blood at the same time; but the circumstances under which those operations are performed do not furnish us with any opportunity of discriminating the comparative effects of the abstraction of venous and arterial blood. Another point which we ought to bear in mind is, that the temporal arteries, as they pass over the zygoma of the temporal bone, can only be once opened at the proper point for the operation; for arteriotomy is not like venesection,—the wound made in the vein uniting, and leaving the canal of the vessel entire; whereas when an artery is opened, it is requisite, after taking the necessary quantity of blood by the wound, to divide it completely in order to allow it to retract, that the blood may be stopped, for, as shall be afterwards shewn, it is improper to attempt to do this by compression alone. The canal of the artery becomes, therefore, by the operation of arteriotomy, completely obliterated, and as the circulation is afterwards carried on by a greater or less number of enlarged branches, neither the original trunk nor a branch of sufficient caliber will be found in the temporal region, on which the operation of arteriotomy could be repeated, should such a measure be deemed necessary.

Lancet.

MISCELLANEA.

HYDROPHOBIA.

A CORRESPONDENT, a physician, was anxious to insert the following statement:—He was called to see a stout young man on the second day of an attack of hydrophobia, who had been bitten by his own dog about four weeks previous to the attack of hydrophobia. He died the following day. Two other persons had been bitten at the same time by the same dog; they were much alarmed at witnessing the above-mentioned case, and consulted the writer, who adopted the following plan:—The bitten, or rather the parts ulcerated from the bites, were kept open by means of *ung. sabinæ*. The system was kept free by means of aperients. *Pilulæ hydrargyri* of five grains, were given to the extent of from ten to fifteen grains per diem, in order that those glands which in the canine species shew the peculiarity of their system, might be for some time affected. This plan was continued, in both cases, for four or five weeks, and about the end of that time the ulcers healed very kindly, though the *ung. sabinæ* had been used the whole time. These two individuals have continued to enjoy good health. Not long after this, the writer was called to visit a young woman, eighteen years of age, who had recently been bitten by a mad dog. While she was feeding two young pigs, the dog, in passing by, bit them both, and they both became mad. The writer calmed her fears—requested a surgeon to incise the bitten part, and bleed her freely at the arm. Aperients were given for two days, and the same plan was followed as in the above detailed cases. The young female has been in good health ever since.

Lancet.

A PIN IN AN EGG.

HOWEVER easily physiologists may account for the following fact, perhaps *none* have witnessed a similar event. This morning a scientific gentleman favoured me with his company to breakfast. Part of our fare consisted of fresh hen eggs, in the yolk of one of which my guest found a common pin, which appears to have undergone very little change, excepting of its lustre. We had previously observed that the shells were perfect.

Lancet.

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LECTURES ON HORSES.

By WILLIAM PERCIVALL, M.R.C.S., *Veterinary Surgeon*
First Life Guards.

ACTION.

PROPERLY speaking, the phrase *locomotion* denotes the faculty an animal possesses of transporting his body or moving himself from place to place; the term *action* expressing his mode or manner of doing this. No horse, in his healthy or normal state, is without the power of locomotion; though there are only certain horses that, in the estimation of the connoisseur, possess action. Action, however, is not infrequently used in a *generic* sense, being then synonymous with locomotion; the kind of action being expressed by such epithets as *good, bad, high, low, round, darting, &c.*, and this is the sense in which I purpose employing it on the present occasion.

For the performance of action or locomotion, two sets of structures are needful: one, which is passive, *the bones*, I have already had under consideration; the other, the active power, *the muscles*, I shall now consider.

THE MUSCLES.

The flesh investing the osseous fabric of an animal body proves, on dissection, divisible into numerous distinct pieces or portions, various in shape and magnitude, and so disposed that, through a power every portion, independently, possesses of contracting or shortening its length, the bones are flexed or extended one on the other, according as is required for the purposes of action or locomotion. That inimitable piece of mechanism, the skeleton, is, as we have already seen, so constructed as to admit of the bones, through the means of their joints, moving upon each other, to that

extent and in that direction which is needed for the action of the parts; and the muscles or acting powers superadded to it, are so applied and distributed upon it, that, while they are enabled to move every part in the manner it was designed to move, they, so far from encumbering or disfiguring the frame-work, confer upon it beauty of form and handsome exterior. It is true that the muscles might have been placed greatly more to their advantage as moving powers; but in such case not only must outward appearances have been sacrificed, but the form of the animal would have turned out such as would have materially interfered with his present functions and uses: thus what he had gained in power he would have more than lost in inaptitude and encumbrance.

The bones, in their figure and in the construction of their joints, offer every facility compatible with the general form of the animal, to the agency of the muscles, the power of the latter depending upon that facility, which is greater in some subjects than in others, and upon their own magnitude and texture. The principle upon which movement is effected is that of the mechanical power of the lever—the greater the leverage presented by the bones, the greater the effect of the action of the muscle upon it; and as muscles, generally speaking, possess power commensurate with their size, the larger the muscle the greater its power of contraction or action. These are the two leading principles on which depend the powers or strength of an animal; there is a third, also to be taken into consideration, which is the texture of the muscle, the quality of its fibre or component parts. That horse whose bones are so formed and arranged as to offer the longest or most advantageous levers, will, *cæteris paribus*, prove the strongest or most powerful: supposing, however, his muscles to be deficient in power, from wanting bulk, or from being lax or adulterated in composition, his length of lever will prove of little profit to him. The same may be said in cases where the muscles are powerful, but the leverage short or upright, and consequently disadvantageous.

In the course of our investigation into the quality of bone in horses of different breeds or kinds, we detected a manifold difference between the solidity and texture of the bone of the cart-horse and that of the race-horse; and if we prosecute our inquiries still further, we shall find some such difference existing between the muscular fibre of the high and that of the low bred animal. In proportion as the fibres of flesh run fine and free from adulteration of adipose and cellular tissue, so are they apt and powerful in action. The heart is one of the finest and cleanest muscles in the body, being required to act with promptness, energy, and duration; and for the same reasons blood-horses are constituted of finer and cleaner muscular fibre than cart and mongrel-bred horses.

Independently, however, of original constitution, muscular fibres will be large and clean and fit for action according to the exercise or work they may have been in the habit of performing for some considerable time past. When we hear it said that one horse (of the same breed) is "in condition," and another "not," we may take it for granted that the muscles of the one have, through a course of exercise and labour, called training, been got into that state of perfection wherein they are capable of performing double or treble what they could have done in a state of idleness or comparative inactivity; and hence it is that by all connoisseurs in horseflesh so much importance is ever laid upon *condition*. The same horse *in condition* and *out of condition* might be, without much hyperbole, pronounced to be quite a different species of animal; for not the muscles only, but the bones, and no doubt other parts as well, under such totally opposite circumstances, undergo, in the course of time, very material alterations in their composition. Indeed, to minute differences of texture existing between the organs of locomotion in animals of high and low breeding—taking into our account the amount of nervous energy either respectively possess—would appear to be mainly attributable those differences of action and capability so characteristic of the two breeds. The race-horse and cart-horse have the same number and shape of bones and muscles, the same locomotive apparatus, in fact, both as regards framework, jointing, arrangement, and distribution; and yet nobody expects the cart-horse to run a race, or the race-horse to go to plough or drag a brewer's dray. St. Bel took up this interesting question, and considered the explanation of it to reside in the respective *weights* of the animals and in the "mechanical arrangement" of the locomotive organs. His words are, "How different is the gallop of the large dray-horse from that of the race-horse! It is with difficulty that the former moves his body to determine it into the place required. He gathers the ground heavily under him at each step, and the translation of his bulk is but tardily effected. The latter, on the contrary, flies like an arrow from a bow, and scarcely imprints the ground with his shoe; often running over a space of four miles in less than eight minutes. These are, however, but individuals of the same class. The number of parts which conspire to effect their respective progression is the same in each; *but these parts differ in their bulk, their extent, and their direction*; from whence result different degrees of power in the levers which they form. So that we are not to imagine that the mass or weight is the only cause of his slowness, *which rather proceeds from mechanical arrangement of the parts*, whose relation and correspondence determine the extent of his motions." No doubt, allowances must be made for "the mass or weight" of the cart-horse as compared

with the blood-horse : it is not so much, however, the dead weight of their bodies as it is the *bulk* of their frames—that which is spread out in the one being condensed and consolidated in the other, without any material loss of power or strength. A reduction of the bulk of parts, renders them not only actually lighter but fitter for conveyance through the air at a quick rate; and when this is effected with increased advantages of lever and facilities for motion, speed must result: the loss of strength not being commensurate with the gain of speed. What, however, as I said before, has as much or more to do with enhancing the animal's powers of speed and endurance than either his diminished bulk or any notable differences in the “mechanical arrangement” of parts, is the *difference of texture* between one and the other, combined with the endowment of a higher amount of nervous energy : for, regard the differences of structure or texture as we may, they are still of themselves insufficient to account for those capabilities which are comprehended in the phrase “blood” or “breeding”; and which we well know from experience will carry the animal through his labours, when every thing else would fail. Vital or nervous endowment, mysterious and incapable of physical demonstration as it may be to us, must, therefore, ever be taken into the account of feats of action and endurance : and when large horses possess this fineness of fibre, together with the requisite nervous energy, we know they will “beat” all little horses. Eclipse was, altogether, a stupendous horse; and with his powers and breeding combined, no competitor could live with him. The reason why, in general, little horses are better than big ones is, that they inherit a concentration of power and energy which the larger sort seldom possess : the moment, however, a breed of *good* large horses is discovered, the little sort cannot fail to fall into the background.

When we reflect on the quick and varied motion of which an animal body is susceptible,—the number of parts there are to be moved, and that every muscle or moving power necessarily has its antagonist muscle or power, we shall not feel so much surprise at learning that there are upwards of three hundred muscles distributed over the body and limbs, and that these vary almost in every possible degree in magnitude, and are of an endless variety of shape or figure. Being mostly for the purpose of locomotion, the majority and the largest of them run from the body to the limbs; and the hind limbs, from having a great deal more to perform than the fore, possess the largest and thickest masses of muscle. The parts called the *buttocks* or *quarters* being composed of muscles whose office it is to propel the animal onward in progression, necessarily possess great fleshiness and bulkiness. The fore limbs are slender compared with the hind, they having little more to perform than to

support or sustain the fore half of the body, and head and neck, and not to do much work in progression. I said before, and I repeat here, that as muscles are worked or exercised, so do they become large or powerful; and this, independently of original formation, will go far to account for their increased size in the hind as compared with the fore quarters, as well as for their largeness or plumpness in animals in condition, and for their smallness or flabbiness in such as are out of condition. View the race-horse brought to the starting post in condition to run; mark his beautiful satiny skin, elevated into prominences by the muscles underneath, which appear distinct enough through it almost to admit of anatomical demonstration: then *feel* his muscles, grasp his crest and shake his neck, and mark how firm and hard his flesh is, and how whipcordy and clear his sinews have through training become; in fine, what a totally different creature he is from what he was before being put into condition to race.

THE STRUCTURE OF MUSCLES is *fibrous*. So many packets of fleshy fibres, constituting in reality so many lesser muscles, disposed in parallel lines, and united together into one mass of flesh, form a distinct and separate muscle. But these packets are divisible into smaller packets, and these again are resolvable into fibres of a still smaller description; and of what the ultimate or primitive fibres consist, or what their true nature may be, microscopical observers are hardly yet agreed, some contending that they are *tubular*, others that they are *beaded* filaments. Be which or what they may, during life they possess the power of contracting or shortening themselves; and through this vital property of contraction it is that all the motions and movements of the body are effected. The order or stimulus for muscular contraction is given by the brain, and conveyed to them through the medium of the nerves; and the action proves feeble or forcible, according to the nature of the order, or the amount of nervous energy emitted into the muscle. What muscular contraction is, and how the phenomenon is effected, remains, after a host of minute and searching inquiries, still problematic: we know little more about it than that it is present with life and absent in death, and that, therefore, it is not dependent on elasticity or any abstract physical force.

THE TENDONS or *sinews* with which most muscles are provided, and which are different altogether in their appearance (being white) and their texture from the muscles themselves, possess no power of contraction, neither are they elastic: they can neither shorten nor elongate. They are, in fact, simple cords connecting the muscles with such parts as they are designed to put in motion, and, being so much smaller than the muscles themselves, are on that account capable of being intruded into the composition of parts,

without adding inconveniently to their bulk, or destroying their symmetry. Through the intervention of tendon, for example, muscles situated in the arm flex and extend the foot. Had there been no tendon or sinew, the fleshy parts of the muscles must have been continued to the foot, thereby rendering the leg an awkward-shaped appendage, as large round, or nearly so, as the arm itself: the “back sinews,” as the flexor tendons are commonly called, are stout firm cords attaching the flexor muscles—forming the posterior part of the arm—to the pasterns and foot. The more prominent and perceptible they are to the grasp of the finger and thumb, the “better” in kind we reckon them to be; and it is, perhaps, as good a criterion of their quality as we can have, that they “stand out well” from the cannon bone, feel tense, and hard, and clean, and perceptibly distinct from another cord, between them and the bone, *the suspensory ligament*, and that the leg altogether, below the knee, measures much in breadth and much in circumference.

A REMARKABLE CASE OF SUB-PERITONEAL HEMORRHAGE, AND RUPTURE OF THE STOMACH AS A CONSEQUENCE, WITH OBSERVATIONS.

By PEARSON B. FERGUSON, *Esq., Attachée to the British Embassy at Paris, &c.*

AN aged grey horse having a disease a little anterior to the region of the withers, caused by unsuitable harness, was placed under treatment on the 20th of September. Finding the nature of the malady grave, it was deemed necessary to have recourse to an operation, which being performed, the wounds were dressed according to their exigencies, and the case continued to go on favourably, the general health being good, up to the 5th of October; in the evening of which latter day, he evinced symptoms of acute intestinal pain. These symptoms, however, became abated after he had received an opiate draught, with the other attentions usual under similar circumstances; and he was, therefore, left apparently tranquil for the night.

On entering the stable on the following day, the symptoms were found to be again present,—the pulse quick and hard and the respiration quick: it was, therefore, thought advisable to detract some blood, which being done to the amount of fourteen pounds, enemata were prescribed, and also ʒii of opium in solution, followed in two hours by a draught composed of aloes sol.

3vii. In spite, however, of all our attentions, the symptoms increased in violence up to 8 o'clock, P.M., after which time he remained obstinately standing, but was exceedingly uneasy with his hind legs; at the same time, however, neither advancing nor retiring. Having observed these phenomena, I thought it probable that some irreducible stoppage existed in the anterior intestines, caused either by hernia, intussusception, or calculi.

Half past 9 o'clock, P.M.—Again visited the patient, and found him apparently tranquil, that is to say, all the violent symptoms had ceased. On a more close examination, however, the dilated eye, pale membranes, the running down pulse, the double action of the heart, and intermitting tremors in the hind quarters, all told me that his death was fast approaching, and which, indeed, took place about 11 o'clock.

When I saw this animal for the last time previous to his death (half past 9 o'clock), I thought that gangrene had set in, as I had remarked in other cases a similar cessation of the symptoms previous to the death of those animals in which I found, on making post-mortem examinations, that sphacelus was the immediate cause of death.

Autopsy eight hours after Death.—From the peculiarity of the symptoms evinced during life I was anxious to see the result of the autopsy, which was as follows:—On opening the abdomen, the large intestines were found healthy; the stomach, however, was ruptured in an extraordinary manner, that is to say, the peritoneal coat, with the external muscular layer, were torn throughout almost the entire extent of the great curvature, while, near the pyloric extremity, the rupture was complete, the laceration having included the remaining coats or layers for the space of about six inches. The most curious lesion presented was observed in that portion of the small intestines called the *ilium*, at about the middle of which there existed a strangulation, caused by an enormous coagulum of blood that extended for about twenty-four inches in length. What appeared the most unusual and most interesting was, however, that the coagulum was situated between the peritoneal and the muscular layer, and was so thick and abundant, that the passage through the intestine was obliterated, or, to speak more rationally, was rendered impervious, from the circumstance of its parietes being placed and kept in close apposition by the external pressure exerted by the great deposition of coagulated blood between the muscular layer and the peritoneum. There was nothing unusual in any of the thoracic organs, excepting that the heart was somewhat soft, and exhibited some petechial spots.

Observations.—The case whose peculiarities I have just re-

corded appears to me not to be entirely without interest, since similar phenomena are rarely met with in the practice of hippopathology. We have seen that hemorrhage took place to a large extent between the peritoneum and the muscular coat of the ilium, and, as I should have before mentioned, that this hemorrhage was apparently from the vessels of the peritoneum. Now, this kind of hemorrhage is extremely rare in the horse, although not unfrequently met with in the practice of human medicine. However, although we have seen that the same lesion can exist in man and the horse, the symptoms and results in the one are nevertheless, very different from those in the other. In what does this difference consist, and by what is it caused?

We know from observation, that when any obstruction exists in the intestinal canal of man, the primary symptoms are pain and restlessness. To this succeeds nausea, and the patient commences to vomit, and continues to have violent paroxysms of vomition and retching from time to time, until either the obstruction is reduced or else gangrene is established, when all pain ceases, and death speedily follows. Such is a general outline of the symptoms manifested by the human being suffering under intestinal obstruction. Let us now turn and consider those presented by the more humble, but not less sensitive, animal, the horse under similar circumstances. In him, when an obstruction, particularly one of the kind which now occupies us, exists, the primary sensations are precisely similar to those in man, as may be easily recognized by the symptoms of colic, if I may be allowed so familiar an expression. These symptoms after a little time become calmed, and give place to an apparent tranquillity, that, in reality, is a state of intense nausea, but which the poor animal being speechless, is unable to inform us of, like the higher being, man. This state continuing for some time, indefinitely long or short, according to the constitution, the phenomena of anti-peristaltic action is established, and the violent symptoms again appear. In this we see the results of the peculiar organization of the stomach of the horse.

This animal is unable, from the arrangement of the muscular fibres of this organ at the cardiac division, to accomplish vomition, and so disembarass himself of its contents, like man and other animals: still, however, the antiperistaltic action continues, the stomach becomes distended, the symptoms increase in violence, and when this organ is distended to its utmost degree by the reversed action of the intestines forcing their contents forward instead of backwards, one of two states is the result; that is to say, the stomach either is ruptured and the animal becomes externally tranquil, and an ordinary spectator would say "he is better, and

will recover ;” but this tranquillity is only the herald of a speedy death. On the other hand, if the rupture does not take place, the poor brute becomes a victim of the sympathy which exists between the stomach and the cerebral system, and falls in a state of coma, which, continuing for some time, another change occurs, and he dies in convulsions painful to witness.

Although I have met with both these terminations as consequences of intestinal obstructions, still, however, rupture of the stomach is the most frequent of the two : but, on the other hand, in contrariety to these terminations, there are two or three cases on record in which actual vomition took place in the horse. These, however, were remarkable exceptions to the general rule, and, I am inclined to think, were the result of a chronic diseased state of the stomach. Probably these animals were inveterate crib-biters. If such was the case, I can easily comprehend and account for the phenomenon of vomition in them ; for I have no doubt that, in exercising the affection called crib-biting, the animal acquires the power of opening the cardia and eructating the gas which may be secreted in the stomach. However, as my notions on this disease (cribbing) are somewhat peculiar and extended, I shall not expatiate on this at present, but reserve it for an exclusive article at a convenient opportunity.

To return to the morbid lesions in our present case :—It will be remembered that, in the record of the autopsy, I stated that the rupture of the stomach was not complete throughout the entire length of the laceration, but that it only existed completely for the space of about six or seven inches towards the median line of the grand curvature at the villous or pyloric division of the organ, while the laceration of the peritoneum and the sub-peritoneal layer extended through almost the entire length of the great curvature. This circumstance appears to me to be replete with interest, since it clearly informs us of the manner in which the stomach becomes ruptured. In fact, we have here, well defined, a case which proves to us that the external or peritoneal coat is always the first lacerated, and that the other layers follow in succession. Moreover, it is a good example of the truth of my observation, “that complete rupture is almost invariably confined to the villous division.” But, it may be asked, why is this the case? The solution of this question, I think, will be easy to those who will consider for a moment the organization of the two divisions of the equine stomach. I allude to the difference in their internal coats ; the cardiac portion being lined with a very dense and tough epithelium and possessing few glands, while, on the other hand, the pyloric has a mucous membrane of a very delicate structure, and containing innumerable glandular cups or

follicles, thereby rendering it more easily lacerable than the other parts of this organ.

With respect to those lesions of the stomach that have been observed in some instances when making post-mortem examinations, and which have been described by their discoverers as being examples of the recovery of ruptured stomachs, I would here take the opportunity of remarking, that the opinions of those individuals, or rather their conclusions, were erroneous, since the cicatrices which they observed were those consequent upon partial lacerations of the peritoneum and sub-peritoneal tissue, which, in all probability, took place in the same manner as the greater part of the laceration in the case above recorded. We know that the peritoneum is not capable of very great distention, and that, therefore, it is liable to laceration; while the other coats of the stomach, being more elastic, will bear greater distention. Again, let us recollect that, after the peritoneal laceration, it is possible for the distention to suffer reduction, either from natural or artificial causes (such as the administration of medicinal agents), before the rupture has taken place in the remaining coats; and that, as a natural consequence, the lacerated peritoneum obeys the restorative laws of nature, and a cicatrice is formed, which leads the unreflecting to the erroneous conclusion to which I have just alluded.

Paris, Oct. 12, 1843.

Note. It is necessary to bear in mind, that my remarks relative to intestinal obstruction refer particularly to those situated anteriorly to the ilio-colic valve, and not to those existing more posteriorly, since, in the latter case, the symptoms and consequences are materially different.

ON BREEDING BULLS.

*By Jos. GOODWIN, Esq., M.R.C.S., late Veterinary Surgeon
to the King.*

IN the remarks of all the celebrated and distinguished breeders, I have never observed that among the various and particular points and properties, such as pure blood, pedigree, beauty in form and proportion of parts, aptitude to fatten, &c. &c., that tranquil temper and disposition was a necessary qualification, to be combined with all the long train of fashionable properties, in order to

make them valuable. The number of deplorable injuries inflicted by ferocious bulls is too general to be insisted upon ; and the continual terror they everywhere produce is a manifest reason for breeders to make good temper and a tranquil disposition a main point. That this property is within the reach of breeders, cannot be doubted ; it may, however, be some time before it can be accomplished : but if the work is never begun, the state and vicious temper of our bulls will, of course, remain the same as they are now.

Notwithstanding the different breeds of domestic animals on the continent are exceedingly inferior to ours in many requisite properties, yet it is due to the breeders in those countries to acknowledge that a fine docile temper and disposition is one of the main points they attend to. The Society of Arts has given their silver medal to a candidate for an ingenious contrivance to fix on the horns of vicious bulls—a plate with a description of which is recorded in their valuable Transactions—with a view to prevent those so disposed from committing any violence. Where there are horns, and those strong enough to bear the weight and use of the contrivance, it is no doubt advantageous : but there are numbers of bulls which nature has not provided with horns, and others that are so small and weak as to render this invention of no use. To root out the cause of an evil is far better than to contend with it when present. On this principle it appears to me, that if the agricultural meetings were either to offer their medal or premium in some way or other, or to publish in their Transactions the means which they consider would correct this great and growing evil, and with a view to induce agricultural societies to bestow medals or rewards on the production of satisfactory testimonials of an animal of good and docile temper having been used as a stock-bull a specified time, this might eventually be of great public utility.

The following narrative will notify where the basis of so excellent a superstructure may commence. The other day, on looking over the well-arranged and well-managed portion of the agricultural department of the Little Park, at Windsor, a fine short-horned bull, in the shafts of a cart, attracted my attention.

Mr. Ingal, the judicious manager of that establishment, observed that he was truly valuable, not only as the best and most useful slave about the premises, being in the continual practice of drawing from two to three tons weight in a cart alone, but as an animal possessed of the finest temper possible. Mr. Ingal, in continuing his narration, said that on one occasion he was turned into an adjoining pasture with another bull, when one of the farming men, in his usual occupation, had occasion to pass not far from them : one of the bulls commenced a furious attack on

the man, got him down, and was on the point of tossing him with his horns. This ever-to-be revered and celebrated beast, seeing what was passing, set off at speed to the scene of action, not to assist the monster in the bloody work he had begun, but to the aid of the defenceless man within his grasp. Feeling confident in his power, he charged the ferocious brute, and was instantly victorious. The man, during this conflict, lay prostrate in a state of fear and insensibility. On a return of his faculties he found himself still within the reach and power of a bull, but not the vicious beast that had first assailed him, but his fellow-slave, who, after his victorious conflict with the monster, had returned to him, and, in order to pacify him and convince him that he had not any thing to fear, the docile creature began to lick him. The man soon perceived it was his old friend, and got up and heaped on him a load of caresses, and returned to his usual occupation without much injury.

ON A REMARKABLE PROPERTY OF ARTERIES CONSIDERED AS A CAUSE OF ANIMAL HEAT.

By J. M. WINN, M.D., Tryro.

Dear Sir,—IN THE VETERINARIAN for October, I find an article on Animal Heat, in which the writer has brought forward as his own some views of mine, with regard to elasticity being a source of animal heat, which I published in the Philosophical Magazine as far back as March 1839. I shall, therefore, feel obliged by your republishing the following account of my experiments and theory as they appeared in the latter Journal.

I am, dear Sir, your's truly.

TO MR. KARKEEK,
Joint-Editor of THE VETERINARIAN.

“About three years since, while making a few experiments on caoutchouc, I was forcibly struck with the property it possesses of evolving heat when suddenly stretched, and was led at the time to infer the probability of other bodies being similarly endowed. The elastic coat of arteries, especially, from the mechanical resemblance it bears the caoutchouc, appeared to be one of the substances most likely to exhibit this calefactory principle; and, in the event of this being the case, it would not be unreasonable to conclude that the incessant contractions and dilations of the arteries during life must form an efficient source of animal heat.

“During the past week I was induced to resume the subject afresh ; and, upon making an experiment with the aorta of a bullock, I felt much gratification in being able to verify my previous conjecture. The experiment was performed in the following manner :—Having cut off a circular portion of the descending arch of the aorta, about an inch in length, I laid it open and carefully dissected out the elastic coat, and, taking hold of it by each extremity, I pulled it to and fro with a continuous jerking motion (in imitation of the systole and diastole of the artery) for the space of about a minute, when, placing it upon the bulb of a thermometer, I had the satisfaction to find that, after it had remained two minutes, the mercury had risen as many degrees. On removing the thermometer, its heat immediately began to diminish. To be certain that the heat did not arise from any other source than the one in question, I took the precaution of covering my fingers with a double layer of flannel, to prevent the communication of heat from the body. I also covered my mouth with a handkerchief, to guard against the warm breath affecting the thermometer whilst watching the progress of the experiment. I may likewise state that the experiment was performed in a room without fire, the temperature of the air at the time being 55° .

“There were several difficulties to contend with during the investigation, and it was not until after repeated trials that the experiment succeeded to my satisfaction. The chief impediment, I think, must have been owing to the moisture of the artery, which, by its evaporation, must have had a constant tendency to carry off the heat. Having, however, performed the experiment twice consecutively in the same satisfactory manner, I think there can be but little doubt entertained as to its conclusiveness.

“My attention was often arrested, whilst conducting the experiments, by the striking mechanical analogies between caoutchouc and the elastic coat of arteries. Like the former, the latter could be elongated to twice its ordinary length, and, on withdrawing the tension, would return to its usual dimension with considerable force and a snapping noise. I was also surprised to find, on slightly drying it, that it would erase black-lead pencil marks from paper without leaving a stain. This latter circumstance is, perhaps, of trifling importance : it serves, however, to shew that strong mechanical resemblance may exist between bodies widely differing in their chemical properties.

“From the foregoing observations, I think I am entitled to conclude that the whole of the heat developed in the animal economy can now be satisfactorily explained. Physiologists have often proved that the greater part of animal heat is occasioned by the chemical changes which take place during respiration ;

there always remained, however, a portion which could not be referred to that source, but which can now, I consider, be fully accounted for by the mechanical action of the arteries. The precise quantity given off during each beat of an artery it would be exceedingly difficult, perhaps impossible, to discover ; but, if we admit the development of only a very small quantity, it necessarily follows, from the circumstance of the action of the arteries being in incessant operation during life, that the heat must quickly accumulate to a great extent, and that the body, unless cooled by the functions of the skin and lungs, would in a short space of time become preternaturally hot.

“The following physiological and pathological facts appear to corroborate the view I have taken of the mechanical source of heat :—1st. The minute distribution of the arteries to every part of the system ensures a general and equal distribution of heat. 2dly. The ossification of the arteries in old age, by diminishing their elasticity, is a probable cause of the diminution of animal heat at the close of life. 3dly. The increased warmth of the body from exercise appears to be more readily explicable upon the principle of increased force in the arteries, rather than in increased vigour in the functions of the lungs ; inasmuch as the immediate effect of exercise is evidently to embarrass the breathing, as shewn by the hurried respiration. 4thly. In many diseases of the lungs, where its functions are all at fault, at a time when the arteries are beating with increased violence, the heat of the body is found to be above the usual standard. 5thly. Medicines which diminish the contractility and elasticity of the arteries almost invariably reduce the heat of the body. 6thly. The heat of local inflammations, in cases where the constitution does not sympathise to any extent, cannot be easily referred to any other source, as the arteries immediately in the neighbourhood of the affected part are throbbing with violence at a time when the capillaries (which are supposed to play so large a share in the chemical theory of heat) are generally considered to have their action entirely arrested. Many facts of a similar nature could be enumerated ; but enough, I think, has been stated to establish the truth of the theory in question.

“Of the nature of the mechanical force I have been investigating little can be said : it may possibly be a kind of intermolecular friction. It is clearly, however, of a different nature from ordinary friction, and which has also been considered a source of animal heat ; but I think erroneously so : for, on examining the mechanism of the human body, we find that everywhere the most efficient means of defence have been provided against its effects, as seen in the various synovial, mucous, and serous membranes,

&c. It is not the province, however, of the physiologist to speculate on the essential nature of mechanical or vital forces. His legitimate object, in the present state of the science, would seem to be that of analysing the simplest operations in the human body ; to aim, first, at discovering the innumerable important processes that are carried on through the influences of physical agents, before he presumes to explain the higher and more mysterious principle of life. Neither should he hastily call the vital power to his aid, to explain a phenomenon such as heat, that is known to be common to every kind of matter, and which can be produced by a variety of physical forces totally independent of life."

ON THE EPIZOOTIC OF 1840.

By Mr. J. YOUNGHUSBAND, Greystoke.

NOT having seen any communication concerning the epizootic of 1840 from my part of the country, I take the liberty, although late, of sending the following account.

On November 20, 1840, I was sent for to Mr. S. Sewel, of Scale, to give my advice respecting what he termed an obscure disease in a two-year old heifer, but which he was very much inclined to believe was the murrain. I had not hitherto witnessed an instance of the disorder, but immediately, on seeing this beast, I was at once able, from the accounts I had read in *THE VETERINARIAN*, to pronounce it to be a case of the prevailing epizootic. Mr. S. had purchased a cow a few weeks before that had crossed a road over which some infected beasts had travelled ; but whether this was the cause of the disease I am not able to say, as this beast was one of the last that was attacked, and no other instance appeared for miles round.

The symptoms were those usually described, though not possessing that degree of intensity which some of the other stock afterwards exhibited.

The beast not shewing much uneasiness, I refrained doing any thing until I had paid another visit. On the next day I visited her again, when I found the malady established in its true form, for there was the catching-up motion of the legs, so peculiarly characteristic of the disease, attended with a champing of the mouth, &c. In detailing the treatment of this beast, it will be understood to answer in general for the whole stock, except that the disease became frequently altered in form.

In the first place, the mouth and feet were well cleansed from all foreign substances with warm water in which a little alum had been dissolved ; and when the vesicles had burst, they were slightly touched with hydrochloric acid and tinct. benz., as recorded in a former number of *THE VETERINARIAN*. This soon gave a healthy appearance to the sore, and in a short time appeared to ease the pain.

The beast not seeming to suffer much from irritative fever, I gave her a dose of opening medicine, composed of sulph. magnes., sulph. sublim., nitre, and zingib. in gruel made for the purpose, at the same time ordering her to be frequently drenched with common gruel. This gently relaxed the bowels, which before were in a constipated state, and the fæces black.

The mouth and feet were daily dressed, but no more medicine was given, and in a week she was convalescent.

From the date of my second visit, until the 28th of the same month, more or less of the cattle were affected every day ; and, in all, the disease assuming the same form, excepting in one case, in which was much neglect, from her being of so ferocious a nature, that she could not with safety be handled. In consequence of this, she was left to take her chance.

In the case of this beast, whether from the dung and moisture accumulating about her feet causing an absorption of the matter contained in the vesicles, or from the malignant tendency of the disease, it quickly assumed a typhoid character, from which she was with difficulty relieved.

In this stage of the disease I used tonics and stimulants, with warm and dry clothing, the beast being several times in the day drenched with a small portion of good sweet gruel. This, in the course of a fortnight, brought her so far round, that she was struck off the sick list. Two of these beasts were fat cows, and were rather more difficult to treat, symptoms of inflammation appearing at different times, but which were always subdued by bleeding, fever medicine, &c.

This person had two good store pigs, which I strenuously advised him to have killed, as they lay close to one of the affected cow-houses, and, in all likelihood, would catch the disease. He immediately complied with this advice, and well was it for him he did, as a fine breeding sow adjoining caught the disease in the first week, and was ill for nearly three more. In a few days after this the rest of the pigs caught the infection, though not in so severe a degree. From their unruly nature their mouths were not dressed, yet they shewed that champing motion, with a flow of saliva, &c. ; but their feet were washed and dressed the same as with the cattle, and no untoward symptom shewed itself.

The next stock I had to attend belonged to my brother-in-law, Mr. T. Richardson, consisting of about forty cattle. Most of them had the disease in a mild form, and by a timely dose of medicine and a few dressings quickly got better. A few of them, nevertheless, were neglected, because he thought they would mend of themselves. These, however, were, generally speaking, longer in getting free of the disease, and one in particular, that had no medicine given to her, had the disease under a severe typhoid form, getting so weak that she was unable to rise without assistance. The udder at the same time assumed a severe form of garget; but by the use of tonics, &c. inwardly, and the ointment of the hydriodate of potash being applied to the udder, she by degrees got better.

One beast, a yearling bull, had it in a most aggravated form, both in the mouth and feet, and, in spite of our best treatment, cast all the horny part of his hoofs, and was a much longer time in getting well. The pigs on this farm were all similarly affected, most of them casting their hoofs.

In another farming stock which I attended similar cases were observed, and by using the above treatment similar results were produced. After these, I think I need not detail more cases, for they mostly correspond with the others. Although I have attended a great many more patients I have not had one death.

Remarks.—As to the contagiousness or non-contagiousness of the disease, it is not for me to decide; but this I know, that the first case I attended in the second farmer's stock was in the fold or yard adjoining the dwelling-house, and my brother-in-law, being anxious to keep as long clear of the disease as possible, had her removed from among the other stock into an open shed outside the buildings, where she was treated accordingly. He having another farm building adjoining, the beasts were, perhaps, two hundred yards apart. His greatest wish was to keep the disease from that place. Although the beasts in question had no nearer communication with each other than the distance mentioned, yet the pestilence shewed itself there. Thence it returned to the contrary side of the first fold, and after that to the first affected cowhouse, thence to the one that until now had kept clear, and finally finishing its career across the road at the other fold.

At a somewhat greater distance was another dairy. Three cows became affected, and suffered severely, lying by themselves, and upon an elevated situation. Each of them had a calf. Before the attack each calf was allowed twice a-day to partake of as much of its mother's milk as would suffice for a meal, yet none of them shewed symptoms of the disease to the very time they

were sent to the butcher. The pigs at this farm also partook of the milk with impunity.

I may likewise remark, that three of my own cows broke out of the place where they were kept, and were found on three successive mornings grazing where the three cows affected with the disease were kept in the daytime; yet, up to the time of writing this, they have not had the disease, or ever shewed the slightest illness that might be construed into a disease.

There are many more farms which have never had the disease upon them, and, some having had it in so mild a form, their owners never thought of seeking medical aid. I have often remarked, that the cattle thus left to themselves, and no aid being applied to relieve the disorder, have been always the most difficult to treat when any acute inflammatory attack supervenes.

There is another point which I would mention, viz. the general health before vesication takes place.

I think, in most of the cases, the health was a little disturbed previous to vesication taking place; but, according to my observation, as soon as the eruption commenced, the fever, in the majority of cases, ceased. I also am inclined to think, that, if the feet were severely affected, the mouth was less so, and *vice versâ*; also, when the prevailing symptoms were in the feet, the constitutional symptoms were less, and the animal sooner recovered. As to the loss of appetite, it depended greatly upon the state of the mouth: first, because the animals in general were ready to take food when offered, but, from the diseased state of the mouth, could not gather it up. Secondly, if any thing like a slice of turnip, potatoe, or even a small portion of hay, were placed so far back as to reach the grinders, they generally masticated it freely.

There is one point which I must not forget. In general, after a beast became affected, I deferred giving the opening medicine until after the vesicles had formed in the mouth or feet; having found that, if given at the commencement of the disease, it generally did little good, always requiring a second dose at the time mentioned. If given at this period, one dose generally sufficed. In a few cases, where debility shewed itself, tonics were freely used. In no case did I observe any harm from the purging, but, in general, the beneficial effects were soon apparent.

ON THE PRESENT EPIZOOTIC AMONG CATTLE.

By Mr. THOMAS SARGINSON, Appleby.

CASES of the Epizootic Influenza have been occurring in this neighbourhood through the whole of the last spring and summer. But the number of them have lately been rapidly increasing, so much so, that, at the present time, the principal part of my cattle practice consists in the treatment of this disease. I must confess that there has no malady occurred in my practice that has more perplexed me than this has done; not so much in discovering the seat of the disease, as in successfully treating it.

This malady steals on insidiously, doing, as it proceeds, almost irreparable mischief; while the owner, not being apprehensive of the danger of the first attack, until experience teaches him, suffers, perhaps, two or three days to elapse, or even more if danger is not then sufficiently apparent to himself, before he so much as thinks of employing a practitioner. It is to this cause that I ascribe, chiefly, both the fatality of the disease and the great difficulty that we too often experience in effecting a cure. When the breathing has become so laborious as to extort from the animal, at every act of expiration, a low, or often a loud, grunt, and other symptoms have become so urgent as to create alarm in the mind of the, too frequently, careless or covetous owner, I am satisfied, at least so far as my knowledge of the treatment of it at the present extends, that it has generally rivetted itself so firmly, and made such ravages in the parts diseased, as to be beyond the reach of any remedial or medicinal measure to eradicate.

I am not of opinion that the disturbance in the digestive system is the first and principal evil; but I believe that it is primarily inflammation of the mucous membranes in the superior parts of both the respiratory and the digestive organs, accompanied, as is regularly the case in such attacks, with a low typhous fever.

When the inflammation has more widely extended itself, the serous membranes, from the intimate alliance subsisting between them and the mucous membranes, become an easy prey to the extending inflammation. The action of the capillaries being morbidly excited to a considerable extent, speedily terminates in weakness of these vessels; and, as a natural consequence of this, an effusion of serum into various cavities of the body ensues.

The earliest symptoms of this malady very prominently shew the existence of disease in the digestive system. The owner rarely discovers any ailment in the animal, if a milch cow, until the secretion of milk is either greatly diminished in quantity, or

at once wholly arrested, and which not unfrequently happens before the appetite is materially impaired. If the animal is now examined, there is heaving of the flanks; quick, but regular, breathing, and not spasmodic or catching. There is also cough, with a peculiar hoarse sound, better understood by the ear than described by the pen. This, at least, tells of inflammation in the larynx and larger bronchial tubes.

There is some soreness of the throat, and a continual drivelling of saliva from the mouth. Ere long, costiveness is sufficiently manifest, and the little dung that is voided is thickly coated with mucus. It is not improbable that that inflammation which occasioned this extra secretion of mucus in the digestive canal, may become so extensive as to so change both the quantity and quality of the secretion, so that, instead of affording protection, it may become an abundant source of irritation, and thus establish superpurgation. Not unfrequently, symptoms of laryngitis, bronchitis, pneumonitis, and pleuritis, follow each other in regular and, sometimes, rapid succession, accompanied by symptoms of gastric affection. I will subjoin a case or two, exhibiting the symptoms and my treatment of it. And, after this, I am not certain that, at some future time, I may not advert to this subject again.

CASE I.—*June 12, 1843.* This morning I was requested to see a three-year-old heifer, and found her labouring under the following symptoms:—The breathing quick, but regular; the pulse about 60, and bounding; the whole of the eye presenting a hue of red; the mouth hot; the extremities colder than natural; the coat staring; frequent cough; protrusion of the muzzle; she eats and drinks carelessly, and chiefly in a standing posture; dungs little, and the fæces are harder than they ought to be. She had been seen to be a little out of health the day before. I bled her freely, and ordered a dose of salts to be given with a little ginger in gruel.

After this, she had a compound like the following given twice a-day until she was so far restored as to be dismissed:—R. Pulv. digital. ʒss, antim. and potass.-tart. ʒj, pulv. potas. nit. ʒiij, sp. æth. nit. ʒiv. M. At its first outbreak in this neighbourhood, I treated a number of cases in a way similar to the above, only adding, occasionally, some local remedies, such as blistering, setoning, &c.; but did not save more than two-thirds of my patients. This great mortality induced me to look out for other remedies.

CASE II.—*August 6th, 1843.* An aged cow. The pulse about 70, weak, and tremulous—the breathing quick and stitchy—a short, frequent hoarse, with a grating sound—the nose extended—a collection of froth about the outside of the lips—the tongue

hot and clammy, but the lips cold—the eyes drowsy, and a gummy matter deposited in the inner angles—the extremities cold—had been ill three or four days—neither eats nor drinks any thing—had given no milk since she was first discovered to be ill—seldom lies down—has shivering fits—has voided very little dung. Had had a pound of salts given to her, and, after that, a “fellon drink”—in plain English, about ten ounces of the refuse of drugs.

I inserted a seton of hellebore into the dewlap, and was surprised to find such a deathly coldness in the cellular substance during the operation. I ordered the following compound to be given morning and night:—℞ hydrag. chlorid. ℥j, camphor ℥iss, pulv. gentianæ 3j, sp. æth. nit. 3j, sodæ sulph. 3iv, M. This medicine was continued four days without affording any relief; after which, I gave the following, which was continued nearly a fortnight:—℞ cupri. diniod. 3j, pulv. gentian. 3iij, sp. æth. nit. 3ss, M.

29th.—Dead: I had not an opportunity to examine her after death.

CASE III.—*August 7th*, 1843, a little highland cow. Pulse quick and small—extremities cold—muzzle dry—mouth hot—rigors—hoosing frequently—has a peculiar grating sound with it—breathing quick and stitichy—each expiration accompanied by a grunt—the eye unusually bright and fiery. Has been ill two or three days—dungs very little and hard—gives no milk—eats a little hay now and then—does not drink—seldom lies down—voids only a small quantity of urine, and that of a deep orange colour.

I abstracted blood till the pulse was affected, and inserted two setons in the dewlap. Give morning and night, in a little gruel, hydrar. chlorid. gr. xij, ol. lini 3viiij, antim. potassio-tart. 3j, pulv. pot. nit. 3ss, M. Let a blister be applied to the chest. This treatment continued to the 12th, without producing any good effect. Give morning and night, in a little thick gruel, pulv. iodic. potas. gr. xx, opii 3ss, ol. lini 3viiij.

16th.—Dead.

CASE IV.—*Sept. 15th*, 1843, a middle-aged short-horned cow. Pulse about 60—breathing much excited—frequent cough—staring coat—eye glistening and tinged with red. Had not given above half her usual quantity of milk on the previous evening—had dunged very little during the night—did not eat well. Give in a quart of oatmeal gruel magnesiæ sulph. 1lb. with a little ginger. I abstracted blood until the system was affected.

16th.—A little improved.

17th.—Worse. Breathing much embarrassed, and the pulse quick and bounding. Abstract more blood. Give, morning and

night, ol. lini. ℥viij, hydrarg. chlorid. ʒj, antim. potassio-tart. ʒj, pot. nit. 3vj.

18th.—No better. Continue medicine.

19th.—Symptoms not so urgent as they were. Continue medicine.

20th.—Improving. Give the medicine without the ol. lini., as the bowels are sufficiently relaxed.

24th.—Continues to improve. Discontinue the medicine. She is now quite well.

Remarks.—When I am called to attend in good time, I abstract blood pretty freely, insert a seton or two in the dew-lap, and order a pint of linseed-oil to be given in gruel. Every twelve hours after this I give eight ounces of linseed-oil with hydrarg. chlorid., pot. nit., antim. potassio-tart., in doses apportioned to the case. I occasionally bleed a second or a third time, but I rely most on the first bleeding. I, also, order the animal to be so situated, as to have a pure and cool—but not a cold air to breathe, and to have for food green meat, succulent roots, mashies of bran and linseed, and thin oatmeal gruel to drink. I pursue this course until the inflammatory symptoms are combatted, which will generally be the case in a few days. If no time has been lost, by administering a little sp. æth. nit., pulv. gentian, et ol. lin. daily, for some time after this, the animal will generally, but rather slowly, recover. If the breathing should continue, or again become hurried, and if, on applying my ear to the chest, I discover, by the absence of the murmur, that a portion of the lungs has become impervious—if there should be, in every act of breathing, a low wheezing whistling sound—if the pulse should be much agitated from a little exercise, and the body generally cold, I rest assured that the air-passages are either nearly filled with mucus, or there is hydrothorax. In the former case I employ the iodid. potas. in conjunction with petrol. Barbados. et pot. nit.; and in the latter I give the diniod. cupri, combined with some stimulant, diuretic, and vegetable tonic.

Drastic purgatives are highly injurious, and blisters do harm in every stage of the disease, excepting the first. Most especially, do I enter my protest against the use of blisters containing caustic substances. There is too much general disturbance and tendency to collapse, from an early stage of the disease, for these things to be advantageously employed.

I certainly place much dependence on emollients, and I give the preference to linseed-oil; for since I have adopted this plan of treatment, and have had my patient in due time, I have very rarely failed in effecting a cure.

ON DROPPING AFTER CALVING.

By Mr. J. BEESON, V.S., Amersham.

As the disorder of the cow designated puerperal fever, or dropping after calving, is still an unsettled subject as to its true nature, I trust any facts that may be gathered relative to the matter, although barren in themselves in point of elucidation, will not do any mischief by farther unsettling the affair. I do not presume any attempt at exposition; I only present to you a few simple observations.

First, the total absence of the ordinary characteristics of fever in most cases, through every stage of the disorder.

Secondly, the very sudden development of the disease in almost every case that occurs.

Third, the equally sudden recovery of the greater number of those who where diseased.

The earliest symptoms that I have noticed are a tremor of the extremities, especially the hinder ones, which rapidly increases to staggering, and ends in total paralysis—the secretions, especially that of milk, diminished in proportion as the disease progresses—the patient, when first down, perhaps supporting herself on her brisket, with her head turned to her flank and making a piteous moan at almost every expiration. If this latter stage of the complaint is not quickly remedied, she soon becomes unable to maintain this position, and lies prostrate on her side: the eyes become amaurotic—she is quite insensible to any and every object—in fact, she is universally palsied. The breathing becomes unnaturally slow, and in some instances stertorous, and in this condition death usually winds up the affair.

Now, Sir, with regard to treatment. Viewing it as an inflammatory or febrile disorder, I have had recourse to the ordinary antiphlogistic remedies, but where I have relied on these remedies I have invariably been disappointed. The depletive plan, with me, has proved a total failure.

This being the case, I have for many years abandoned it, and have adopted the opposite, or stimulant plan. I do, however, occasionally bleed if I am called in the early stage, but never at an advanced period.

I also take care to administer some purgative early in my attendance, but place no reliance on it without a stimulant being added. I think, as a purgative, croton and aloes have the preference in this case with me, and, as a stimulant, large doses of spt. nit. eth., with about two ounces of tinct. opii. A variety of other stimulants may, however, be used either separately or combined,

with equally beneficial results; I also usually rub a stimulating embrocation well into the back and loins, and apply a sheep-skin over all. I think a turpentine clyster also of much service. Many patients under this plan of treatment will be on their legs and feeding, as if nothing had happened, in from twelve to twenty-four hours from the administration of the first dose. This is a fact worthy of remark, and every country practitioner, I think, will remember that no farther doubt needs be entertained as to their safety when once they can stand.

I scarcely dare venture any remarks as to its nature, and the post-mortem examinations have not been attended with uniform results; but that it is a nervous disorder I think most practitioners will admit. It also seems peculiar to the cow, and likewise to the period of parturition.

It appears to me to depend on a morbid impression made on the nervous fibrillæ of the uterus and adjacent parts, which is communicated to the spinal cord and brain, the consequence of which is a suspension or total destruction of nervous function, and this independent of inflammatory action, and in its nature quite as inexplicable as tetanus and some other nervous disorders. If congestion of the brain and spinal marrow exist, may not that be regarded as a consequence quite as much as a cause? If this view of the case is reasonable, it will not be difficult to understand why stimulants effect a cure when other remedies fail. If a morbid impression is the cause, a counter-impression is indicated, and necessary for the restoration of the nervous function, and this appears to be best effected by the remedies which pass under the class of stimulants. Of course, in this case, as in all others, some modifications under certain circumstances will be necessary, and which can alone be determined by the practitioner in attendance.

CASE OF PARTURITION—BREECH PRESENTATION —EXTRACTION OF THE CALF.

By Mr. W. A. CARTWRIGHT, Whitchurch.

ON the 9th of March, 1843, I was requested to assist a cow about to calve: the water-bag appeared about five in the morning, and soon afterwards the hind legs protruded. Some force had been used, but without avail. At eight o'clock I saw her: the pains had then subsided. I examined her, and found that all was right for a breech presentation, and that greater force was only necessary. In a short time we extracted the fœtus.

Observations.—The only peculiarity in this case was the hind legs being presented straight out lengthways through the vagina, and not, as is generally the case, with the hind legs “down in the udder,” as it is called. After the calf was extracted, I introduced my hand up the vagina, and I fancy the uterus, in this case, was much lengthened, from the calf having had his hind legs stretched out.

A VIOLENT CASE OF STAKING IN A MARE.

By the same.

I SAW, a few months ago, a mare, belonging to a Mr. Bradshaw of this town, that had run violently against the end of a sharp rail that was nailed to posts on the side of a road. It entered between the 11th and 13th ribs, breaking the 12th in its way, towards their cartilages; passed through the diaphragm, grazed the stomach, and went through the spleen, cæcum, and some of the small intestines. Near the udder it passed out of the abdomen, and went under the abdominal muscles and between the skin, and issued behind through a portion of the near side, just under the vulva. The rail was not broken in passing through, and a portion of it, at least four feet long, was sticking out behind, and about a foot at the other end outside the ribs. She had come a quarter of a mile with it in her, and much better than could be considered to be possible in such a case.

A SCIRRHOUS TUMOUR ON THE RADIUS OF AN OLD SPANIEL.

Operated on by W. YOUATT.

August 20th, 1843.—AN old spaniel, belonging to Mr. M—, of Greenwich, had a large scirrhus tumour on the front of the radius, occupying almost the whole extent from the elbow to the wrist, very prominent in the centre, and threatening to break through the skin. It seemed to adhere closely to the parts beneath, for it was scarcely moveable without moving the whole arm, nor could I introduce the finger under it in any part. The object of the examination was, whether material danger would attend the ex-

tirpation of it. I gave it as my opinion that the chances were much in favour of the dog; but that some danger would attend it from the magnitude of the tumour and its close adherence.

September 17th.—It is now dreadfully ulcerated, and the stench is almost unsupportable. It was determined to proceed to the operation. A strong physic ball was administered.

19th.—I applied the tourniquet above the elbow. After having made an incision through the integuments, nearly round the tumour, I began at the lower part of it, and, for half-an-inch, was obliged to cut through the base of the tumour, almost as hard as cartilage. I then arrived at its close adhesion to the anterior part of the fore-arm.

The cellular substance was very thin, not a line in thickness. I very carefully dissected along it, leaving a beautifully smooth and glossy surface below the tumour along its whole base, until I arrived at the bending of the arm, where, coming close on the tourniquet, I left a very small portion of the tumour, or rather a substance of a kernelly feeling connected with it. I could not remove this while the tourniquet was on. On loosening the tourniquet, I took up two principal vessels, and found the skin would not reach over the arm, for the whole of it was diseased, and the smallest portion could not be saved. A wound also was left, extending from the wrist to the elbow, three inches wide. I dressed with dry lint, and placed a bandage over it.

The smooth glossy surface of the base of the tumour was not touched by the knife except for the first half-inch, and the clean glossy appearance of the fasciæ of the muscles of the fore arm were very beautiful. The operation lasted about twenty minutes. The tumour, when detached, weighed twenty-four ounces, and not more than three ounces of blood were lost. The dog walked back to his kennel, and ate well in the early part of the afternoon.

21st.—Good matter is already plentifully forming. There is no appearance of inflammation, and the dog is evidently more at his ease than before the operation.

26th.—The wound looks clean and healthy; but there is no disposition to heal or contract; it is evidently painful, as the dog is frequently looking at it, and begins to get ill-tempered when meddled with.

October 3d.—The wound appears to be healing fast.

10th.—Two small tumours have appeared for two or three days past,—one under the part of the wound that had begun to skin over, and where the tumour had been cleanly and completely removed; the other under a part that was still sore, and whence, likewise, the tumour had been perfectly removed. These tumours are rapidly increasing.

20th.—Both tumours have strangely grown, and one of them has ulcerated. The process of healing is completely stopped, and four or five other nuclei can be felt round the wound, at various distances from it. The dog is evidently in pain, and gets thin.

The tumours have continued to increase. The first that ulcerated is now as large as a duck's egg. The other has likewise ulcerated, and the virus corrodes the whole wound. I have, for nearly three weeks, been endeavouring to persuade the owner to have him destroyed.

28th.—The poor animal was at length relieved from his misery. Not permitted to be examined.

ATROPHY IN A GOAT.

By the same.

September 13th, 1843.—Going into the yard of a dealer this morning, I observed, as I thought, that a favourite goat did not look so bright and so wicked as he generally did. On asking the reason of his altered appearance, I was told that he had been purging during the last two or three days; and that, to-day, purging had much increased, and he was quite off his feed. I recommended that *cret. preparat.* ʒi, *catechu* ʒi, *ginger* gr. x, and *pulv. opii* should be given morning and night.

16th.—He feeds better, and does not purge so much. Continue medicine.

20th.—His apparent improvement was delusive. He again refuses to eat, and he purges as much as ever. Give the powders three times every day.

23d.—Died last night. I obtained permission to examine him. The stomachs, and particularly the rumen, were distended with food. No appearance of inflammation in them or in any part of the intestines; but there was, what we so often see in the sheep, a general collapse. The lungs were particularly collapsed on the left side, and partially on the right. It was the bloodless appearance of the lungs of a calf that had been frequently bled, and slaughtered in the usual way. He was almost a perfect skeleton, and may be said to have died of actual atrophy. The purging seemed to be the effect of debility, rather than undue stimulus.

I have long been convinced that this is no unfrequent case. Where there is evidently no febrile affection, tonic medicine should be more frequently applied than it generally is.

PERFORATION OF THE STOMACH OF A HORSE BY BOTS.—WORMS IN THE INTESTINES OF A MARE.—PARALYSIS IN A HORSE.—DITTO ON THE LEFT SIDE OF A MARE.—FOUNDER AND PNEUMONIA.—CANKER IN THE FOOT OF A HORSE.—A CASE OF OPEN ELBOW JOINT.

By Mr. J. TINDAL, V.S., Glasgow.

PERFORATION OF THE STOMACH OF A HORSE BY BOTS.

April 22d, 1838.—I WAS called to attend a four-year-old draught colt, the property of the Rev. A. Kennedy, Dornoch, which had been purchased eight weeks previously, and was at that time in apparent good health. Since the purchase he has been rapidly losing flesh, notwithstanding his being fed on the best of corn and hay, and was now reduced almost to a skeleton.

The pulse is 30, and weak; he staggers as he walks, and frequently strikes himself against the walls of the loose box. His eyes are sunk and his countenance haggard. He is hide-bound; his legs and ears are cold, his bowels costive, and he has very little appetite.

My opinion is that worms, inhabiting the stomach and intestines, are the cause of his illness, and I have little hope of his recovery.

I ordered bran and malt mash, also a decoction of linseed and a little hay to be given. Clothe his body and wrap his legs in flannel bandages.

23d.—He is relishing his new diet. Administer a laxative and an occasional enema.

24th.—Pulse stronger; he is more lively, and does not stagger so much.

25th.—The bowels relaxed. Give a ball of gent., ant. tart. et zingib., every morning.

27th.—He is very uneasy, frequently looking at his flanks, and taking very little of his mash. Give him ol. oliv. Oij, tinct. opii \mathfrak{z} j, in three bottles of oatmeal gruel, and administer an opiate enema.

28th.—Much worse, and unable to rise. He was supported with gruel until the 30th, when he died.

He was examined by Mr. Lesslie, who found the stomach very much inflamed, and containing 150 bots, several of which had penetrated through the coats of the stomach, and were adhering to the diaphragm. The other viscera appeared to be healthy.

Bots are considered by many as harmless; but when they

exist in great numbers they must be injurious, and constitute unsoundness.

WORMS IN THE INTESTINES OF A MARE.

A grey draught mare, four years old, the property of Mr. Williamson, was admitted into the infirmary on the 26th of Feb., 1842, in very low condition, and hide-bound. During the last twelve months she had frequent attacks of colic, and worms were occasionally voided in the excrement. She has a most voracious appetite.

Treatment.—Put her on bran mashes, and give a moderate allowance of hay.

March 1st.—Administer a cathartic. On the next morning the medicine operated. Hundreds of ascarides were evacuated, also a number of the lumbrici-teres, one of which measured fourteen inches in length.

3d.—Physic being set, give a worm-ball of ant. tart. et zingib. every morning fasting, and allow 6lb. of oats twice in the day.

12th.—Repeat the cathartic in twenty-four hours. Medicine operating, and great numbers of ascarides, &c. being evacuated, the same treatment was continued until the 22d, when another cathartic was given to her.

23d.—The physic is operating; few worms are now to be seen, and those quite dead. Discontinue the worm-medicine, and increase her feeding to 4lb. of oats three times a-day. In six weeks she was discharged, greatly improved in condition and spirits.

PARALYSIS IN THE HORSE.

The subject of this case was a valuable gig-horse, also the property of Mr. Williamson. He appeared to be stiff on all four feet as he stood in the stable, and was in evident pain, and trembled when he was taken out of it.

From the above description I expected a case of founder; but on examination he presented the following symptoms:—Pulse 30; legs and feet very cold; frightened and agitated when approached; unwilling to allow his fore feet to be handled, and it was with difficulty he was backed out of the stall; he then appeared to be almost completely paralysed in all his limbs, and was with difficulty kept from falling. I perceived his knees marked towards the right side; also about an inch of abraded surface above the right orbital fossa, evidently shewing that the horse had fallen. There was no fracture on the forehead, but on applying the slightest pressure posterior to the occiput he fell backward as if he had been shot.

I abstracted sixteen pounds of blood, administered a strong cathartic, and applied a blister to the poll (during the latter operation he fell three times). He was put into a large and well-ventilated loose box, and a bran mash and a pailful of gruel were placed beside him. He attacked the mash with the greatest avidity, opening his jaws to twice their natural width. The muscles of deglutition were also affected, causing difficulty in swallowing. I ordered him to be kept quiet, fed sparingly, and, if no improvement was perceived after the lapse of twelve hours, the bleeding to be repeated. I also gave a ball of pulv. nucis vomic., pulv. gent. et pulv. zingib. It was, however, found to be impossible either to bleed, or give him the ball; neither could the blister be dressed; the medicine was therefore divided, and mixed in his mash morning and evening. At the expiration of a fortnight he was led out to gentle exercise in the park, and at the end of two months resumed his work.

PALSY IN THE LEFT SIDE OF A MARE.

Sept. 12, 1842, I was called to attend an aged saddle mare, belonging to Pat. Sellar, Esq., Morvech. Being a favourite, she was kept excessively fat. To-day she was ridden a few miles, and suddenly taken ill. On returning home, I found her within half-a-mile of the stable, and lying by the side of the road. She lay on the left side, the limbs of which were motionless, but with the right fore and hind legs she struggled greatly. The pulse was hard and accelerated, the breathing quick and heavy, the abdomen distended; partial cold sweats are on the right side, the palsied limbs are cold, and the vital properties of the left side evidently diminished. Venesection 13 lbs. Administer a strong aloetic cathartic in solution—turn her on the other side, and apply with friction a stimulant liniment to the diseased side and legs: mucilaginous drinks and emollient enemata were occasionally administered. In three hours she was bled a second time, covered well with dry straw, and two men left to watch her during the night. I left her at nine o'clock, P.M., four hours after which she rose and walked to the stable.

13th, 8 o'clock, A.M.—She is on her feet, and has been so all night—the pulse 45—breathing more tranquil—she is weak, and moves the left hind quarter with difficulty—the side and legs have regained their feeling, and are warmer—she has eaten her mash, and drinks gruel freely. Allow a little hay, bandage the legs, and keep her quiet.

14th.—This morning she was lying down when I entered the stable, but rose without difficulty, and is otherwise much improved. She was kept on a spare laxative diet for four weeks, and then resumed her work.

FOUNDER AND PNEUMONIA.

A dun fast-trotting phaeton horse, the property of D. Davidson, Esq., of Tulloch, was driven eighty miles in two days. Part of the road was slippery, and the horse's shoes were not roughed. On the latter part of the journey he was dull, and refused to feed.

On March 18, 1843, I was called in at nine o'clock P.M., twenty-fours after his arrival home. I found him standing, breathing quickly and laboriously—the pulse 96, and oppressed—the feet intensely hot—the metacarpal arteries pulsating strongly and the bowels costive. He stood as if fixed to the ground, frequently breaking into profuse perspiration.

The shoes were taken off, and I had him bled from the fore feet, but found it impossible to keep up the hind feet. I bled largely from the neck, blistered the sides, and administered pul. digit. ʒij, pot. nit. ʒij, ant. tart. ʒj, et alo. Barb. ʒj, in a bolus, to be repeated in six hours. He was also back-raked, and laxative enemata injected. Apply cold poultices to the fore feet, and wet bandages behind.

12 o'clock, P.M.—Venesection 6 lbs. Place a bran-mash on the feet, and thin gruel beside him.

19th, 6 o'clock, A.M.—Pulse 120 per minute—feet excessively hot, and, from the respiratory murmur it is evident that there is effusion in the thorax. My opinion is, that he cannot survive many hours.

8 o'clock, A.M.—Bolus as before, without the aloes. He lingered in the greatest agony until twelve o'clock at noon, when he fell down, and died without a struggle.

CANKER IN THE FOOT OF A HORSE.

A draught horse, the property of the Duke of Sutherland, at Skelbo farm, received a puncture in the right hind foot, from which he became very lame, throwing the weight of his hind quarters on the other foot. In two months he recovered in the right side, but became dead lame in the left foot. The smith examined the foot, and observed that its sole had become high or convex. He at once removed a considerable portion of the sole in order to evacuate matter, when nothing but blood came away.

April 28th, 1843, I was called in, and found the horse on three feet, and unable to put the fourth to the ground. From reaction there is a considerable degree of fever, and the appetite impaired. I had the shoe taken off, and discovered a large portion of the sensible sole in a state of canker. I removed all the detached horn and part of the fungus; dressed the parts with chloride of antimony, and applied a poultice to the foot, the dressing to be repeated morning and evening. He was put into a loose box, ordered to have fever medicine, and to be fed on a laxative diet. In four weeks he was shod with a leather sole, and resumed his work.

In all diseases of the foot of the horse, it is a great saving to the proprietor to call in the aid of the veterinary surgeon as early as possible, particularly in cases of canker; for if that is not arrested in the commencement, it soon involves the whole of the vascular parts of the foot, and not unfrequently bids defiance to every mode of treatment.

OPEN ELBOW-JOINT.

On the 6th of May, 1842, I was requested to examine a four-year-old draught horse, belonging to Mr. Burnet, of Ardross, who, ten days previously, received a kick in the elbow-joint. It did not occasion immediate lameness, consequently he was kept at work eight days, when he became seriously lame. On examination it is found that he keeps his leg in a flexed position. The muscles of the fore arm are greatly swollen, and synovia is escaping in large quantities from the joint. The pulse was 80, and the appetite impaired. He appeared to suffer excessive pain, and refused his oats. I told the owner I had little hope of his recovery. He was bled and fever medicine was administered. He was also ordered mashes and hay, and a little fresh grass. The actual cautery was applied to the sinus, and bandages to the limb, which was frequently repeated without success. Lotions of various kinds, and also lime, were applied. In two weeks the inflammation of the muscles was less, but the discharge had now assumed a muco-purulent character, there is a greater degree of lameness, and the animal is sadly fallen off in condition. I recommended that he should be destroyed. Being about to open an establishment in Glasgow, I lost sight of him, and lately received a letter stating that the horse died four weeks after I left, and that the bones of the joint were quite rough and diseased.

A CASE OF SPLENITIS IN A HORSE.

By M. MOREAU, V.S., Arcis-sur-Aube.

THE diseases of the spleen, in our domesticated animals, are those which have least engaged the attention of the pathologist, whether on account of our ignorance of the functions of that organ, or the unfrequency of disease in it, or the difficulty of the diagnosis of that disease in veterinary medicine, in no part of which have we any description of the symptoms by which it is designated.

M. Gellé, Professor of the school at Toulouse, has endeavoured to cast some light on the diagnosis of these affections; but there remains much yet to do. It is, then, the duty of every veterinary surgeon to publish the facts that occur in his practice, and which can throw any light on this obscure point of pathology.

On the 28th of December, 1840, I was sent for to examine a tall mare, of good constitution and in apparently healthy condition.

An hour before I arrived, she was trembling all over, and the countenance was exceedingly anxious. The owner, thinking it was a case of indigestion, had given her a bottle of salt and water. This did not prevent her from alternately lying down and getting up again, nor was there any amelioration in her general state and appearance.

When I arrived, she was standing up, her legs, before and behind, very wide apart—heaving—her flanks agitated—the nostrils strongly contracted, as was the whole of the face—the upper and lower jaws separated from each other, as if the animal was endeavouring to respire through the mouth—the pulse not to be felt—the conjunctival membranes pale—the heaving of the flanks very considerable. Three or four minutes after my arrival these symptoms ceased, and there only remained a tottering kind of motion: but, immediately afterwards, there was a new and more decidedly spasmodic action, and she fell, and was afterwards raised again by mere force. I immediately suspected that there was some internal rupture, and my prognosis was a very serious one.

I bled her from the jugular, but I could only procure a small quantity of blood, thick, exceedingly black, and resembling pitch. I received a portion of it in a glass, in order to ascertain its physical character. While I proceeded with the bleeding, which yielded a very feeble jet, although the vein had been largely opened, she threw herself anew on the ground, and, after violent convulsions, which continued some minutes, she died.

A coagulation of the blood took place in about ten minutes.

The clot had preserved the colour of the blood, which was of a very deep brown. The cohesion between the constituent parts of the blood was very weak. The clot was soon reduced to a species of deliquium as I took it in my hand to examine its physical properties.

Post-mortem appearances.—Two hours after death the body appeared to be very much inflated. The pectoral organs presented nothing remarkable, except their deep colour—the slight consistence of the clots contained in the ventricles of the heart—a red tint of the internal membrane of the pulmonary veins, and of the serous membranes which lined the ventricles of the heart and its valves.

On opening the abdomen, I found five pounds of blood in the diaphragmatic region of that cavity. I then carefully examined how this hæmorrhage had taken place. I saw that the spleen was double its usual size, and presented, on its surface, three bloody tumours, immediately under the splenic capsule.

One of these tumours, situated at the base of the spleen, near its grand scissure, was open, and had given vent to the blood which I had seen. It formed a wound three inches in length, the bottom of which presented a deep black lobulated matter, which cannot be better compared to any thing than to that of melanosis in its state of *ramollissement*.

The second of these tumours, fifteen centimetres from the first, and on the same surface, was of the size of a pullet's egg, and contained a thin liquid matter, which resembled the red serosity, or rather the water employed in the washing of flesh. The parietes of this tumour resembled those of the preceding one.

The third, placed on the opposite surface, and near the point of the organ, was divided into two lobes, and each lobe was about the size of an ordinary nut. It contained the same products.

As to the general alterations in the structure of the spleen, I have already said that it was double its natural size: its colour was not changed, and its consistence, which I thought had been diminished, was, on the contrary, augmented, for it presented all the characters which M. Andral assigns to induration of the spleen. It was with little trouble that, after making a section of the organ, I arrived at and extracted what has been called the earthy deposit of the spleen. None of the other abdominal organs presented any thing worthy of interest, except the mesenteric veins, and the vena portæ, the serous membrane of which presented that red tinge of which I have spoken above.

This appears to me to be a remarkable case of inflammation of the spleen in a horse. But what was the cause of this affection? I confess that I am ignorant on this point. With the exception of the spleen, every part was in the most healthy condition.

A CASE OF RUPTURE OF THE PARIETES OF THE ABDOMEN SUPERVENING ON THE PARTURITION OF A COW.

By the same.

ON the 26th of June, 1840, I was requested to visit a cow, which, having passed the period of utero-gestation more than fifteen days, did not present any sign of approaching parturition.

During several days there had been remarked a dropping of the belly to such a degree, that, the beast standing, it dragged on the ground. This strange appearance was first observed when the cowherd entered the stable one morning. During the succeeding eight days she did not appear to be incommoded by it: she continued to feed, and to take her rest, as usual; but, on the 25th, she would not get up, and refused every kind of food; the proprietor therefore sent for me.

When I arrived, I found the cow lying on her right side, and seeming to suffer very much, but she made no effort to expel the fœtus. I could feel the calf, still alive, at the lower part of the left flank, from which it was only separated by the parietes of the womb. This latter organ appeared to me to be altogether powerless. I thought that it might be useful to endeavour to excite some contractions in this organ, and which should be violent ones too, in order to effect the desired purpose, since they could not be seconded by the parietes, which were torn through the whole of their posterior part. I therefore gave her a considerable dose of savine.

I was not deceived with regard to this; for, two hours after the administration of the drink, the womb began to contract with so much violence, that it forced from its cavity in less than ten minutes, and without any assistance from me, a very large calf, well formed in every particular. The deliverance was a perfectly natural one, and, altogether, scarcely occupied a quarter of an hour.

Being assured of the safety of the calf, I informed the proprietor that I had much fear with regard to the mother. I bled her to the extent of ten pounds, ordered some gruel to be made, and administered some slightly nitrated drinks. I then requested the owner to make me acquainted with the death of the cow as soon as it occurred, and on the 28th I was requested to superintend the dissection.

It was four hours after her death when I arrived. The body being turned on its back, and the skin carefully elevated, the

following lesions appeared:—There was a complete rupture of the abdominal tunic at its insertion into the border of the pubis. There was also rupture of the aponeurotic fibres of the costo-abdominal muscle—the *obliquus externus abdominis*—and the fleshy portion of the ileo-abdominal—the *obliquus internus abdominis*—to the extent of three or four inches from the sternopubic—*the rectus abdominis*, to three inches from its insertion into the abdominal border of the pubis. This last muscle in the part which continued attached to it was separated into two equal portions, and permitted us to see the tendon formed by the reunited aponeurotic fibres, that constituted the linea alba, and which were also ruptured.

The womb offered nothing unusual, but the abdomen enclosed twenty-four pounds of a bloody serosity, with some clots of blood in it. The borders of the parts that were torn had some tendency to be cicatrized.

As the accident was not perceived until the morning on which my attendance was required, it is probable that it had no existence until the preceding night, and was owing to the animal being permitted, notwithstanding her advanced state of pregnancy, to go into the fields or pasturages, separated from each other by numerous wide and deep ditches. It is very probable, or in a manner certain, that, in the leaping of some of these, the animal slipped or fell, and the injury was effected. That which authorises me in this supposition is, that she was naturally of a wild and savage disposition.

In a physiological point of view this case is not without interest. It demonstrates in an unanswerable manner that the contractions of the abdomen are not indispensable for the accomplishment of parturition; that it may take place without the succour of art, by the simple contraction of the uterus; and that they may be induced or increased by the influence of certain medicaments, termed emmenagogues.

La Clinique Vétérinaires.

THE VETERINARIAN, NOVEMBER 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

WE endeavoured, in the number of our Journal for last month, to shew, on evidence too plain to admit either of doubt or contradiction, that the veterinary art had, chiefly through the aid of

medical science, undergone great improvement, and that, in its improved state, it had rendered essential services to both horse and cattle kind. We stated that some noisome and destructive diseases had, under its benign influence, almost or quite disappeared from observation, and that others were now treated according to a system not having reason alone, but likewise humanity for its directing principle; and that there was no sort of comparison to be made between the success of this mode of treatment and the mischief and deterioration animal property sustained under the old practice of farriery. On the present occasion we purpose turning our attention from the art to its practitioners.

As the veterinary art, emerging out of a state of barbarism, began to assume the aspect of a science, its professors or practitioners grew not only more numerous, but began to reckon among them persons of an educated character. The prospects of the new science were becoming inviting, its study was found to be a pleasing one, and horse-men of the first rank in the country did not disdain to lend to it their name and countenance. What, however, told more for its respectability than any one thing besides, was the obtaining for veterinary surgeons commissions in the army: thus constituting them *ex officio* gentlemen, and placing them, as a matter of right, by the side of those who were "gentlemen bred," and, on occasions, persons of rank as well. For the new honours candidates speedily poured in, in numbers ample, and of a better caste than had been seen before; and at this period such a selection might have been instituted as would have rendered the general body of veterinary surgeons respectable, by keeping out such as have since thrown discredit upon it. Unfortunately, however, this was not done;—every Thomas Nokes and Jonathan Styles who came with twenty pounds in his pocket was sure of gaining admittance; and the consequence has been, in the course of time, a profession of that motley character such as we at the present day behold it. This accounts for the absence of any thing like amalgamation or association in the profession. It is no less true, that professional bodies composed of heterogeneous elements are incapable of holding together than that a house divided against itself must fall. In the metropolis, and some few other places, where members were to be found in suffi-

cient numbers, professional societies were formed, and for a time appeared prospering: owing, however, to some of the ill-leaven having insinuated itself, sooner or later ferment commenced, and the conventions exploded. And so general has this been, that, with the single exception of the Veterinary Association, which is, for the most part, a pupil's affair, there is hardly a veterinary society remaining. It is consolatory, however, to feel that matters, in this respect, appear to have come to their worst. Persons of a better class than formerly are now seen entering the profession, or at least the same unqualified candidates would hardly be received now as gained entrance before. For the army, under the present administration, we feel quite secure. The wholesome check placed at the military portals will assuredly close the doors against all persons proved either incapable or characterless. And it will be something to keep the military veterinary department sound. Men of reputation in the profession will always find a sort of rallying point for themselves in private life in their brother army veterinarians, and the two together will, against much opposition, succeed in maintaining a good stock of professional importance.

For several years following its institution the veterinary profession went on increasing in numbers and respectability, there being those in its ranks who, by dint of talent and industry, worked out for themselves a good name, and for it a good amount of reputation. At length, however, the supply of veterinary surgeons became greater than the demand for them. Every market-town in the kingdom had one or more, and the army and East India Company were full: the consequences were, that in many large towns the number of practitioners became augmented, and veterinarians were to be found located in parts of the country which before had been included in the range of those practising in the nearest towns. In this state of affairs came peace, retrenchment, and railroads. The peace dismissed several veterinary surgeons from the service of government, and drove them to seek livings through private practice. Retrenchment, coming with depressions in commerce and trade and agriculture, cut down establishments and equipages: packs of hounds that had been for years hunting the same countries were given up, either entirely

or had a precarious existence maintained a few years longer by subscription; carriages were put down, and horses for pleasure reduced in number. Railways now come into play, and sink the horse world in lower estimation still. The stage coach, which years of experience had brought to such perfection that a person could travel by it his hundred miles between breakfast and dinner, is driven off the road by the steam coach, whose capabilities of speed tell as four and five to one, and with which by horse-flesh there is no competing. The consequences are that hundreds of excellent horses are thrown out of work and sold, and the towns and inns upon the lines of the great roads, whose living depended upon the coach traffic, are all but or quite ruined. It is idle to assert that the same number of horses still find employ in the short coaches and omnibuses: such concerns can never afford to give any thing like remunerating prices for their horses, and are too poor and ephemeral to prove beneficial to veterinarians, or even to respectable saddlers or coach makers; and although the coaching business did not do any very great deal in a general way for the veterinary practitioner, still there were many coach proprietors of late who found it to their interest to have their horses well attended to, the loss of whose custom must be severely felt.

From the causes stated, great general depression has taken place in the horse world, and this, as well as by others, has been sorely felt by veterinary surgeons. Few good veterinary practices yield at the present day what they formerly did; indeed, there are some, we are grieved to be forced to add, which have become so unproductive as hardly to support their holders, and in more situations than one to have induced them to migrate to other localities. Thus the strange and unwelcome fact becomes forced upon us, that there are still living in the profession those who have seen it rise, flourish, and decline. *Decline*, did we say? No! this is not our meaning; we mean, suffer for a time the depression common to other professional and mercantile concerns.

To what the revolution which has of late taken place in the horse world is to lead, whether this great country be doomed to lose its horse celebrity, or whether, through the infusion of fresh energy into our great horse patrons, or through some fresh

diversions or channels for the employment of horses, Britain be not destined to be one day more famous than ever for her breed of horses, are questions of too much present obscurity to admit of any attempt at solution from our pen. Veterinarians have still one resource: they must remember that it is their duty "to cast round the world an equal eye, and feel for all that live"—that no animal is beneath their notice—and that cattle of all kinds now become valuable property, and will pay for professional skill. And should practice of every kind turn out slack, leaving the practitioner still hours of idleness, we do not see how, in the country, he could employ them better, or more profitably, or more in accordance with his professional avocations, than in some agricultural pursuit. He must not forget the alliance there has from old existed between veterinary and agricultural concerns; and that horses and live stock constitute so valuable a consideration in a farm, that the veterinarian's knowledge of these is likely to compensate, in a measure, for any lack of knowledge on his part of land, supposing him deficient therein; indeed, so self-evident is this truth, that every young farmer would do well to furnish himself with a good amount of veterinary science before he undertook the controul of a grazing or breeding farm. P.

Our readers will be highly gratified at finding in the present number of our Journal a paper, "written some years ago," and incidentally brought to light, from the portfolio of a gentleman in years and eminence unsurpassed by any veterinarian at present living. Mr. Goodwin has for several years past retired into private life, enjoying his well-earned *otium cum dignitate*. In his retirement, however, he has at no time been unwatchful of what was transacting in the veterinary world, but has ever evinced, as he continues to do, the greatest enjoyment in the company of a professional friend with whom he can freely chat and converse, over a social glass, about times when that world possessed more stirring interest than it does at the present day. For his valuable and interesting paper we cordially thank him. P.

REVIEW.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Posthumous Extracts from the Veterinary Records of the late JOHN FIELD. Edited by his brother, WILLIAM FIELD, Veterinary Surgeon, London. 8vo. pp. 236. Longman and Co.

THE memory of John Field is too fresh in our recollections to need more than the mention of his name to call to our reminiscence many pleasant, social hours—many intellectual moments, spent in his company. Though himself a man of self-denial, and of that reserved and unobtrusive character that rather shuns than seeks the public gaze, yet his station at the head of a veterinary firm, for extent of practice greater than any to be found in Britain, perhaps in any other country in the world, brought him daily, nay hourly, before that busy world his nature would have led him to eschew, as well as almost daily in contact with some member of his own profession. Not with the latter *professionally*, however; for John Field had, as a practitioner, it would seem, a peculiar dislike to consultations: at least, it was rare, if ever, in his practice he called any one in to his aid in the solution of a case, however mysterious. This might probably arise from his having his father for part of his time, and his brother for the remainder, acting with him in the business.

John Field entered the Veterinary College as a pupil in November 1818, obtained his diploma in 1820, and immediately afterwards was taken into partnership by his father, John Field, senior. It will be in the recollection of some of our readers, that the business, which in the latter gentleman's hands flourished and grew into the large concern it is at the present day, originated with the late Mr. Moorcroft, who was then Coleman's joint-Professor at the Veterinary College. The tempting offer, however, of the East India Company to Mr. Moorcroft, induced him to relinquish both the professorship and the business, at that time the two best veterinary concerns going, and embark—as too many have done, never to return again—for Hindostan.* What Mr. Moorcroft obtained by the exchange we have never rightly heard: all we know about the matter is, that Mr. Coleman died

* Could and would any kind reader of our Journal give us some biographical account of a man so eminent in his day, and at all hands admitted to be so talented, as Mr. Moorcroft, it would be doing an act of great justice to his memory, as well as filling up a gap in veterinary history.

worth £47,000; and Mr. Field, senior, we should imagine, could not have left behind him any thing very considerably short of double that sum.

John Field's heart and soul was in his profession. Though from his mildness and amenity of manners, he appeared by nature by no means cut out for the hard work, and rough work, and cross work, of veterinary private practice, yet with such zeal and devotion did he throw himself into it, that from the beginning he commanded success, and in the end fully obtained it. "Actively engaged as he was," says his brother, "in the management of an extensive veterinary practice, he still would snatch minutes for recording any act or incident worthy of note; and but too often would rob himself of portions of that rest both his body and mind at the close of day so much needed, that he might reflect and enlarge upon any notes or casual remarks he had made in the course of his diurnal round of practice." With the exception of half a dozen days' hunting in the winter season, taken at times when his avocations allowed, and a short run-away excursion for a week or two's change of air in the season when town was empty, John Field was never out of his business. His motto, as was that of his father, was,

"Nihil sine labore;"

and faithfully and truly he acted up to it; for from six o'clock in the morning until ten at night he was to be found occupied in his professional duties.

Eulogy of the man has led us away from our present object—the review of his posthumous work, or rather of a work compiled by his brother, out of such materials—papers, cases, notes, &c. &c. as he left behind him; and they must have been pretty voluminous, since we find it stated in the Preface, that the fifty or more cases published, constitute "not above a *tithe* of the whole." The work commences with a paper on *pleurisy*, which we remember being read in 1828 before the Veterinary Medical Society. And, unless our memory have failed us, a warm and interesting debate took place on the occasion between John Field and Messrs. Goodwin, Henderson, Sewell, Youatt, and others. John Field contending that the character of the respiration and pulse, and the pain evinced by pressure on the sides, expressed by shrinking, and the utterance of a peculiar groan or *grunt*, followed by convulsive twitchings of the panniculus carnosus, were diagnostics between pleurisy and pneumonia; others maintaining the doctrines propounded at the time by Coleman, that cases of pure or simple pleurisy were rare, and that when they did occur it was in practice difficult or impossible to distinguish them. John Field was the first, publicly, to call in question the cor-

rectness of the Professor's doctrine, and, by drawing the attention of the members of the Society to the point in question, to lead them to a more attentive observation of it in their practice; and the result has been, we think we may add in justice to the memory of the deceased, that the two diseases, pleurisy and pneumonia, are not now confounded in the manner they formerly were.

HEPATIRRHŒA, OR HEMORRHAGE *from the liver*, next engaged John Field's attention. He read a paper on the subject to the Veterinary Medical Society in 1830, stating it to be a disease confined to the horse alone, rarely to occur under ten years of age, and then, in such subjects as are in appearance remarkably healthful and fat, and that are good feeders, and in constant work; and as the disease is not manifested before "the whole or part of the liver is irreparably destroyed, but little can be expected from the aid of the veterinary art, save the preventing the abuse of those depletive measures, particularly venesection, to which non-veterinary persons are apt to have recourse in all kinds of ailments, and by which patients of this class have been a little sooner hurried off." Such cases, fortunately for the credit of our art, are by no means of frequent occurrence; though the extensive practice of John Field brought several of them under his notice.

PURPURA HÆMORRHAGICA.—On this subject we have, in the work before us, "a rough outline, apparently," as the editor informs us, "for some future paper." The subject is one of a most interesting description, and, if we mistake not, even at this distant day from its first introduction, to many veterinarians is still a *novel* one. We think we are not erring when we assert, that the *scarlatina*, of which Mr. Percivall first made public announcement in THE VETERINARIAN, in the year 1834, and which, in his HIPPOPATHOLOGY, he has since also denominated "morbillous disease," is the disorder here described. We have no desire to quarrel about names, though in such a case as the present we deem more than ordinary caution requisite in the choice of one; but we feel it our duty to say, after taking all the phenomena of the extraordinary disease in question into consideration, we think Mr. Field's the more appropriate appellation: and we say this with full conviction, that neither to purpura nor to scarlatina, as those diseases commonly occur in man, does the disease in the horse completely correspond. Mr. Field's "Outline," as far as it goes, in itself excellently descriptive, is elucidated by cases (at pages 47, 214, 217, 233) on which, it seems not unlikely, it was originally founded.

INTUS-SUSCEPTION and PLEURO-PNEUMONIA constitute the subjects of two other skeleton papers; and though they are, as

acknowledged by the Editor, "still more imperfect" than the former, and "great indulgence is craved for them" on that account, still do they contain some practical remarks which will prove of service to future cultivators of the same field of scientific investigation.

We now come to the "CASES;" and, altogether, a more interesting collection we have not for many a day perused. There are among them such as are singular, strange, and extraordinary in their character—instructive and practically useful; nay, even entertaining: and, generally speaking, they bear upon them the impress of the hand of a careful and diligent registry, altogether constituting a valuable legacy, for which we feel no doubt, one day or other, the Editor will, as he deserves, receive the thanks of the profession. In the mean time, since the present assemblage constitutes but "a tithe" of what the lamented author left behind him, our advice to the Editor is, that he betake himself with all convenient speed to revising the remaining nine-tenths of the cases, with a view of rescuing from oblivion, through publication, such of them as bear upon them any such stamp as those exhibit which he has already published. We shall conclude with transcribing a few cases, selected in confirmation of what we have stated in reference to their diversified character.

We have, in the course of our practice, seen numbers of horses dressed with infusions and decoctions of tobacco, on account of mangy or other cutaneous affections, but we never witnessed any such effect as is detailed in the annexed case:—

"*Dec. 30th, 1817.*—A horse belonging to Colonel —, at Hall's stables in Grosvenor-place, was dressed over with tobacco-water in order to cure the mange; this was about nine o'clock in the morning, and at half-past twelve a man came to say the horse was extremely ill. When I went to the stables I found him breathing very laboriously, sighing, and shivering; there was no pulse to be felt, at least the pulsations were not distinguishable. I ordered the tobacco-water to be washed off with warm water and scrapers; I desired four drachms of purging paste to be given immediately, with the following drink:—

R Sp. æth. nit.....	3ss
Tinc. rhei	3ij
— zingiberis	3ss
Aquæ	Oj. Mis.

A similar drink to be repeated in three hours if he was not better; but, if much improved, not till the evening.

"The horse was seen again in the evening, when his pulse was very irregular; there was no shivering nor blowing; he fed well; and the next morning he was perfectly recovered."

The next case we have selected is of a strange description: we do not know that the author's solution of it will bear strict pathological scrutiny.

"*Dec. 13th, 1836.*—A black cart gelding, belong to Messrs. —, went,

with other horses, to Cobham with beer, having fed well the previous day. On his arrival at the above place on the night of the 13th, he was found to be off his feed, and on his return to London on the following day, he was chilly and much depressed. On the 15th there was complete loss of appetite; his pulse was 72, and rather weak; the pupils of his eyes were slightly contracted, and the iris, as well as his mouth, of a yellowish tinge, and slight effusion had taken place beneath the conjunctiva; he was excessively stiff in motion, and pressure upon the skin of the hind legs, which were a little swollen, occasioned much pain. In attempting to walk a short distance he was greatly exhausted, sighed frequently, and at last fell down in a fit. When he had sufficiently recovered, a mixture was given to him, consisting of nitrous æther and laudanum, which was directed to be repeated twice during the day, and the hind legs to be fomented with warm water. In the afternoon he became more tranquil. On the 16th, the pulse was still 72; the respiration was slightly accelerated, and accompanied with mucous rattle; the mouth was clean; the eyes more suffused; and the hind legs much inflamed. He was indisposed to move, and staggered when compelled. Whilst looking at him after having pushed him from one spot to another, he suddenly stumbled forward and pitched on his head in the straw, as if shot through the brain. He then rolled on his side, stretched out his hind legs, and struggled as in convulsions which attend certain cases of diseased lungs. After a few minutes he began to breathe rapidly, with much mucous rattle, the struggling and convulsions returning from time to time during twenty minutes; after which he rallied so as to admit an anodyne mixture to be administered, which was ordered to be repeated thrice during the day. He had no other fit.

"17th.—Pulse 66; mucous rattle has ceased; respiration tranquil; slight cough; fever mixture to be given three times a-day

"18th.—Pulse 66; respiration quiet; feeds; walks about and lies down; fæces pultaceous.

"19th.—Pulse 60; feeds well; legs a little swollen; continue mixture.

"20th.—Pulse 54; convalescent: commence tonic mixture.

"This case did perfectly well.

"The affection of the mucous lining of the air-cells supervening on the painful condition of the skin of the legs (for he was almost unable to move on the 15th) probably occasioned the convulsive attacks."

The following extraordinary hypertrophic disease of the ovary would seem, in the annals of veterinary medicine, to stand by itself:—

"A bay mare, belonging to Mr. C—, having been off her feed a few days previously, was, on the 13th of December, 1820, affected with the following symptoms: viz. pulse 90, and very feeble—eyes extremely pale—loss of appetite—no quickness of breathing, nor fainting nor sweating, was observed—she did not lie down, and was excessively fat. The treatment consisted of small doses of the copaiba balsam, administered three times a-day; which in some measure relieved the symptoms, for in a few days the pulse was much reduced, the appetite improved, and the eyes became yellow, as in liver affection, after the bleeding has for some time ceased. Tonic medicines, combined with slight diuretics, were now exhibited, and she continued apparently to mend until the night of the 30th of December, when she suddenly died, being found dead on the following morning. On the previous day she had been walked about a little, being in very good spirits, and eating much more than she had at any time during her illness: her pulse, however, had never been less than 60.

Examination post-mortem.—Peritoneum highly inflamed—about three gallons of blood collected in the belly, in the middle of which was discovered an immense tumour, weighing fifty-six pounds; being a diseased ovarium, into which the cornua uteri were continued. The Fallopian tube had two or three little lumps of glandular structure much indurated, most probably portions of the ovarium. It was the right or off-side ovarium, and the disease was principally situate on that side.

“The immediate cause of the animal’s death was the effusion of blood into the cavity of the belly from a number of small points on the surface of the tumour, which, internally, consisted of a central, firm, or scirrhus nucleus, from which a number of membranous bags passed out on every side in a radiated manner, each bag containing blood; but the tumour itself was perfectly organized. The Fallopian tube terminated at this nucleus.

“The tumour lay on the mouth of the pelvis, but did not compress the bladder, as the mare was not affected with incontinence of urine.”

The cases of lithotomy, which we regret our limits will not permit us to transcribe, will be read with great interest by all practical veterinarians.

One case more, and we must finally conclude.

“A grey gelding, bought for the Duchess of M. to ride, a very fine horse, and which she refused 300 guineas for, became at length so vicious from the tricks taught by her groom, that he would kick when her ladyship got on his back, and she was unable to ride him. The evil continued to increase till neither the groom himself nor any body else could ride him; with this character he was sold at Tattersall’s for 35 guineas, or thereabouts, and was bought by three young gentlemen. They took him into Rotten Row, each mounted in his turn, but was immediately unhorsed. They then took him to Choppin’s, who had at that time George, a man whom no horse could kick down, requesting that he might be permitted to try. The man consented, and, having put on one of their bridles and saddles, rode the horse away, kicking in a most furious manner, but incapable of throwing him down. He galloped him two or three times up Rotten Row, got off, shifted the saddle, got on again, and rode him once or twice more without the animal offering to kick in the least. The young gentlemen mounted, and rode him very easily, and were well satisfied with the breaker; but he, anxious for a farewell gallop, to which they consented, rode him up Rotten Row and back again, three-parts speed, and pulled him sharp up on the bridge by the Serpentine, where they were standing. On the horse moving two or three paces they observed him limp, and then go excessively lame. He was brought here, and the large pastern of the near fore leg found broken: as he was a valuable horse, and this being a simple fracture, it was thought worth the trial. A man who sat up with him all night, about four o’clock in the morning, going into the stable to see him, observed the tail very low, and on looking into the stall, saw his hind foot turned up backwards. Mr. Moorcroft and my father were called up, and found that both metatarsal bones were fractured, the upper extremity of each sticking through the skin, and the horse standing on them. He was destroyed. It was inferred, that both the metatarsal bones were fractured at the same time with the large pastern of the near fore leg, and that the horse having lain down, had made extraordinary exertion to get up again, by which the simple fissures in these bones had become converted into compound fractures; and this was further corroborated by finding the large pastern bone of the off fore leg also fractured in the same manner as the near.”

ON SWELLING UNDER THE JAW IN CATTLE.

By Mr. J. H. OLIFF, Gasberton.

HAVING been a subscriber to, and reader of your valuable periodical, *THE VETERINARIAN*, for some months, with not a little pleasure, and I hope profit too, I beg to hand you a very short paper on the treatment of indurated tumours in the sub-maxillary and other glands included in the channel of the jaws of cattle, as practised by a friend of mine, a medical gentleman.

In the summer of 1842, one of his store heifers was observed to be very considerably swollen under and between the jaws, so much so as to impede her breathing, which might be heard at a considerable distance, and threatening suffocation. He had her caught and examined, and finding the swelling to be of that nature which is designated scirrhus, or indurated, he procured a piece of rough common brick, and rubbed it until the part was tender. Then making a saturated solution of sulphate of copper in sulphuric acid, he traced a line round the edge of the tumour with the solution, about three-quarters of an inch in breadth, so as to include the whole of it, and finished by making some cruciform lines from one edge to the other, of the same breadth: not that there is any virtue in the sign of the cross in such a case, but if more of the surface is touched with the solution, it causes a too extensive sloughing of the cuticle, which is to be avoided.

The dressing was repeated in the course of a few weeks, and when the animal was taken up to the straw-yard, at the latter end of the year, the tumour was found completely reduced, and she afterwards fed as kindly as any of her fellows.

A great deal has been said of late in *THE VETERINARIAN* about indurated tumours and their successful treatment; and if you consider there is any thing in the above that will in the least contribute to the store of veterinary information on that subject, and will save any poor beast from the knacker's knife, you are at liberty to insert, and I, too, should be grateful to see it in the pages of *THE VETERINARIAN*; but let it by no means appear to the exclusion of more valuable and interesting matter.

A WORM IN THE SCROTUM OF A COLT.

By Mr. J. MEAD, Leighton Buzzard.

I MET with a case a short time ago, a brief account of which I have sent to you, if you consider it worthy of a corner in *THE VETERINARIAN*. The novelty of the case, and the desire I have to communicate any information in my power, will, I trust, be a sufficient apology for my intruding on your valuable pages.

While castrating a three-year old colt I was surprised, upon letting one of the testicles out of the scrotum, to find a worm accompanying it, and which upon further examination was found to have made rather considerable ravages upon the surface of the testicle, causing patches of inflammation upon different parts of it. The worm was about an inch and a half long, rather larger than a common needle, with a singularly shaped head. It moved about briskly for some time afterwards ; but I much regret that, while I was finishing my operation, the curiosity of some of the bystanders led them to make too free use of their fingers, otherwise I should have preserved it.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from p. 534.]

RHEUMATISM

Is very common in this country, especially during the wet seasons, in those places where the variation in the temperature is great, as in the Cedid districts. It frequently attacks in the night, and it is by no means unfrequent that a horse is in perfect health in the evening, and is taken from his picket in the morning with scarcely a limb to stand on. Sometimes it attacks one limb, and sometimes the whole are affected. The cure is similar to the attack ; for sometimes one leg will suddenly recover, or it will shift from one leg to the other.

Although it is more frequent in this country, I do not think it is so difficult to remove as in Europe. I have generally met with the greatest success from bleeding, hot fomentations, and warm

clothing. If this should not succeed, and the animal is in high condition, the bleeding may be repeated. A rowel or seton may be opened contiguous to the affected part, and the part itself may be blistered. These last remedies are scarcely ever required in this country, as the disease usually disappears under the first mode recommended.

SPAVINS AND SPLENTS.

There is a small bone attached by ligaments to each side of the upper part of the common bones forming the lower parts of the hock and knee joints. These small bones are termed the metatarsal bones in the hocks, and metacarpal in the knees. One of their chief properties is to receive part of the weight of the animal when in action; and their respective ligaments, elongating each time the weight of the animal descends, acts as a natural spring to prevent concussion; for there is no animal that moves with so much velocity and so little concussion as the horse: this proceeds, in a great measure, from the number of these natural springs which he possesses in the knees, hocks, fetlocks, and feet.

If the horse is worked too young or too much, or if in shoeing the foot is pared away more on the inside than the outside quarter, the weight of the animal descends more on the inside of the leg than nature designed, and inflammation of the ligaments is effected, by which bony matter is secreted, and the ligament loses its pliability and becomes hard and bony. Excrescences of the same will also increase the bulk and injure the action of the joint.

If it is discovered in its earliest stage, it may generally be reduced by that treatment which will increase the action of the absorbent system. With this intent, four quarts of blood may be taken to relieve the pain and inflammation, and one of the following bolusses may be given every morning:—

Take of Venice turpentine	4 oz.
Yellow resin	ditto
Squills, powdered	$\frac{1}{2}$ oz.
Oil of mint or aniseed	ditto

Mix and divide into twelve bolusses.

A blister of the following should be rubbed over the part affected:—

Take of Spanish flies powder	$\frac{1}{2}$ oz.
Corrosive sublimate	$\frac{1}{2}$ dr.
Spirits of turpentine	4 oz.

Mix for use.

The corrosive sublimate should be previously dissolved in a table-spoonful of spirits of wine, strong brandy, or arrack.

This blister should be thoroughly rubbed in, after which it may be tied up with a bandage. After six or seven days it should be repeated, and, when the effects of the second blister are quite removed, frictions twice a-day of strong mercurial ointment, for a few days, should succeed. The blister may increase the swelling, but it will abate with the effect of the blister.

If the complaint yet resists, I would recommend firing round the parts affected, which will tighten the skin and act as a kind of natural bandage. At the Veterinary College, the firing is recommended previous to blistering; but I should imagine this mode of hardening the skin would render the blisters and subsequent mercurial frictions less perview to the parts, independent of the unsound appearance which firing produces, and which we would evade if possible.

BLOOD SPAVIN

Is occasioned by a dropsical enlargement of the mucous capsule of the joint, which, pressing against a superficial vein passing up the inside of the hock, occasions an obstruction of blood and subsequent enlargement.

Thus the blood spavin does not originate in the vein, but is merely an effect; consequently, in order to remedy this disease, the cause must be removed. This is generally effected by blistering, firing, and bandages; and if much inflammation or lameness exists, a few quarts of blood should be taken from the animal.

This treatment in general succeeds; and, if the vein does not recover its natural size, it is but of little consequence, as lameness very seldom exists after the mucous capsule is reduced. The vein is sometimes tied up, but no real advantage results from it.

SECTION VII.

ON THE EYE AND ITS DISEASES.

This chapter I wrote previous to joining the cavalry brigade in which I practised, consequently I could form no competent knowledge of what variety might exist in diseases of the horse's eye in this country: I therefore wrote according to those which the animal is afflicted with in Europe. On shewing it to a medical gentleman, he informed me that the animal in India was by no means subject to so fatal a disease as I had described it, the inflammation being merely superficial: I have, however, experienced the reverse. In H. M. 25th Dragoons there are several blind horses, which I found on inquiry became so precisely in the same manner as I had described, that is, by repeated inflamma-

tions, each attack leaving the eye in a weaker state, until a film succeeded, and ultimately loss of vision. I also witnessed two or three horses that became blind precisely in the same manner, and whatever relief was afforded was merely temporary; and considering the advantages which the animal enjoys in this country, not being confined to foul stables where the acrid exhalations corrode the eyes, as in Europe, I think the animal is to the full as subject to inflammations of the eye in this country as in Europe, and that these inflammations prove ultimately fatal to vision. In H. M. 25th Dragoons, I think there are six or seven horses which have lost an eye by this disease. In Europe I do not recollect that it is much more predominant.

VETERINARY JURISPRUDENCE.

COSSAR v. THOMPSON.

[Communicated by Mr. J. HORSBURGH, Dalkeith.]

THE following case may not, perhaps, be altogether uninteresting to your readers.

On the 6th of April, 1842, Mr. Cossar, horse-dealer, bought from Mr. Thompson, in the same profession, a bay pony for £9, warranted sound. The pony was delivered to Mr. Vessey, innkeeper here, without being at all in Mr. Cossar's stables, for £1 profit, making the price to Mr. Vessey £10; Mr. C. also warranting the animal.

The pony being very fat I was requested to give him a dose of physic on the 8th, with a view to prepare him before he was put to work. On turning him round, in order to give the ball, I observed a particular mark, about an inch and a half under the off-eye, like a recently healed wound, but, having a peculiar clear and shining appearance, with a depression in the middle as if the point of a finger had been firmly pressed into a swollen part. This I remarked to the groom at the time.

At night the physic began to operate, and, during the next day, it was operating rather freely, and the pony was sick. I ordered a little hay. At night the physic set, and I then prescribed half a feed of beans, which he ate, taking his hay as usual.

On the next morning the groom came in a great hurry, saying that the pony was all swelled and stiff, and could scarcely move. I examined him, and found him as described, the hair standing on end, and the absorbents so prominent, especially

on the hind quarters, that he presented an appearance as if some person had been recently punishing him severely with a whip. The mark under the eye was much tumefied. I gave some cordial and stimulating medicine, and ordered warm clothing and chilled water.

On the next day the nature of the disease was too evident. The sore under the eye had broken, and was spreading in all directions; the absorbents of the thighs were much enlarged, presenting regular farcy-buds at numerous places. The sub-maxillary glands were swelled and hard, and a discharge had taken place from both nostrils.

12th.—The farcy-buds inside the thighs, along the sides, and in the neck and head, are bursting and discharging a thin foetid matter. Strong doses of the diniodide of copper were given, but with little hope of any good being done.

13th.—Every symptom shews the rapidity with which the disease was running its course. The head was swelling—the discharge from the nose considerably increasing—the extremities, especially the hinder ones, much swelled—and the farcy-buds increasing in all directions. I gave a certificate of unsoundness from farcy and glanders, and advised the owner to inform Mr. Cossar of the state of the animal.

14th.—All the symptoms aggravated—great discharge from the nose—difficulty of breathing—tumefaction of the head, neck and throat causing the deglutition to be difficult. The dealer refuses to have any thing to do with the matter, and it was said that we had killed the patient with our physic.

15th.—Still worse—the septum narium ulcerated through—great difficulty in breathing—excessive tumefaction in the extremities—he can scarcely be pushed round in his stall—foetid matter discharging from every part. A more pitiable case can scarcely be imagined. I advised the owner to send for Professor Dick, as the case was likely to end in litigation among the parties.

16th.—Mr. Vessey went to Edinburgh, and brought back Mr. Dick, who also gave a certificate of unsoundness, the disease having existed previous to the time of sale. The examination having taken place, we ordered the animal to be destroyed, for we considered it highly dangerous for any animal to be near to him.

Messrs. Vessey and Cossar then went to Mr. Thompson, at Edinburgh. They gave him an account of the case, shewed him the certificates, and proposed that, in order to save farther trouble, they would divide the price among them; but to this Mr. Thompson would not give his consent; consequently, Mr.

Cossar became pursuer against Thompson, and summoned him before the small-debt court for £8..6s..8d., being the highest sum that could be sued for by summary process before the sheriff.

The case was deferred by Thompson on one and another frivolous pretence, three several times, occasioning a great deal of trouble. On the fourth time the case came on for a final settlement.

The witnesses for the plaintiff were Messrs. Vessey, Dick, Horsburgh, and Mr. Vessey's groom. On the other side appeared Messrs. Ritchie and Watt, V.S., of Edinburgh, with Mr. Gregg, riding-master.

Mr. Vessey deposed to the business part of the transaction, the buying of the pony, &c. Professor Dick deposed that he had examined the pony, and found him labouring under acute farcy and glanders, and expressed himself fully of opinion that these diseases existed in the animal previous to the sale.

Mr. Horsburgh stated that he had administered a dose of physic, and on the following day symptoms of farcy and glanders developed themselves, and that there were evident marks of severe punishment having been inflicted. A simple over-dose of physic, he said, could not have caused the disease. It might have produced inflammation of the villous coat of the intestines, but that would have been attended by altogether different symptoms. He acknowledged that a smart dose of physic, given soon after the system has been affected, would, by weakening the animal for a time, produce the effect of the disease sooner. In doubtful cases he was in the habit of giving doses of aloes of the same power as those here given. Farcy never produces farcy or glanders unless infection has been previously communicated. From the circumstances connected with the case, and particularly his having observed the farcy-bud in the cheek before there was any other appearance of the disease, he is confident with regard to the state of the case.

Mr. Vessey's groom deposed to the pony having been brought to his master's stables—to the physic having been given, and the scar pointed out by the preceding witness—to different particulars already described—and to his taking the pony to the Duke of Buccleugh's kennel.

This closed the examination for the plaintiff.

Mr. H. Leighton, V.S., on the part of the defendant, affirmed that he examined the pony in question, with a view of purchasing him for another person—that he saw no appearance of farcy or glanders—that he considered the pony as sound, and would have bought him as such—that one dose of physic might pro-

duce inflammation of the bowels, but not farcy and glanders—and that he examined the pony a few days previous to his sale to Mr. Cossar.

On his cross-examination he admitted that the pony might have received the infection a short time previous to his examining him, and that it might not then have become apparent.

Mr. Watt, V.S., had seen the pony with a view to purchase; saw no appearance of farcy or glanders, and considered the pony to be sound. He examined him shortly before his sale to Mr. Cossar.

On cross-examination he acknowledged that the pony might have received the infection before the defendant examined him—that it is occasionally a considerable time after infection before the disease appears—and that he saw no appearance of wound or ulcer under the jaw.

Mr. Gregg, riding-master, said that he examined and rode the pony with a view to purchase him, and considered him sound. He saw no appearance of farcy or glanders.

The Sheriff, after commenting on the evidence of the different witnesses, decreed for the plaintiff with all expenses.

MISCELLANEA.

A ROYAL BULL FIGHT,

Exhibited before the Queen of Spain and her Court, Oct. 1843.

To-day Her Majesty and her sister made their first appearance at a bull fight, or, as the court journals express it, “assisted at the performance, for the laudable object of procuring funds to build a church in Chambin.” This benefit netted above £1000 towards the completion of the church; for the good citizens of Madrid, male and female, filled the bull-ring to overflowing, through the combined influence of religion, loyalty, fashion, and the “classical spectacle of the amphitheatre.”

Her Majesty was surrounded by her ministers, generals, and grand functionaries. Lopez and Serrano, Narvaez and Mazarredo, and the Dukes of Bailen and Saragossa. All vied in explaining and expatiating on the succession of combats, which lasted for three hours, and did not terminate till the sun had set for a considerable time and it was no longer possible for Her Majesty to discern whether the men were killing the bulls or the bulls killing the men. Eight bulls were slaughtered in the ring, and twelve horses were left gored and disembowelled there. (How many stag-

gered off to die outside I know not.) Her Majesty was graciously pleased to pay particular attention to every thing said and done, and exhibited a degree of interest and animation, of which ordinary observers had previously thought her incapable. But it is evident that she is far from apathetic or impassive when stimulated by congenial sights and subjects. Her loving subjects hailed her to-day as a truly Spanish queen, wondering at the squeamishness or self-denial of her mother, who had never brought her there, having given up the stirring spectacle during her widowhood, or second marriage. "As for Espartero, he well deserved to be expelled for not encouraging the *toros*." Her Majesty was evidently resolved to enjoy herself, and make up for lost time. She was highly amused when the first bull ran in, scattering the cuadrillo of combatants. She was more seriously interested as the fun advanced, and the bull rushed upon the mounted *picador*, goring and tossing and tearing up his horse, and trampling upon, doubling up, and crushing the fallen rider. The grotesque efforts of the bull to shake the half score of barbed darts out of his shoulder seemed also to afford Her Majesty high amusement, and instruction too; for one could, at a short distance, easily translate her animated gestures. Her Majesty also was obviously gratified to observe, "What a noble animal a horse is!" and how he can run about with his entrails hanging out, and bear to be mounted again, and again brought to the scratch—his eyes sometimes bandaged of course, otherwise he would not stand it. Then his dying struggles, and rolls, and kicks in the air, were so comical; while the bull, pawing and snuffing, and kneeling on him, turned him over and over, and ripped him up so knowingly, letting out the blood in gallons! "Truly 'twas a dainty dish to lay before a queen!" Nothing was wanting to complete the royal sport but the death of half a dozen men. One fellow was carried off with his ribs broken (it was said), but that was nothing.

Times, Saturday, October 21.

THE ILLNESS OF THE RHINOCEROS IN THE GARDENS OF THE ZOOLOGICAL SOCIETY.

[An account of the illness and treatment of this animal will probably not be uninteresting to our readers.—Y.]

July the 14th.—HE was perfectly well yesterday afternoon, and exhibited the very best of his clumsy agility; but in the night one of the watchmen thought he was somewhat uneasy.

In the morning he was evidently so, and began to roll about. He was let into the paddock, that he might there take exercise, which generally has admirable effect in relieving these colicky pains in the quadruped. Two of the men also set to work and rubbed his belly well, to which he quietly submitted. An ineffectual attempt was then made to administer some castor oil.

He continued to get worse and worse, and at eleven we were fortunate enough to get him once more into his den. There we continued the friction of his belly, but soon changed it for the application of hot water; and, taking advantage of one of his rollings, we poured about twenty ounces of castor oil and one and a half ounce of laudanum down his throat. We then changed the embrocation to spirit of turpentine, which was well rubbed in over the whole of his belly.

He began to be easier, and at length ate two or three small carrots that were offered to him. We took advantage of this, and concealed a scruple of calomel in a carrot, which he ate.

About four o'clock he began again to roll as much as ever: we then put a strong collar round his neck, harnessed him with ropes on both sides, and forced three pints of castor oil upon him. He was exhausted in the struggle, for a violent struggle it was, and lay down for a while motionless; his pains, however, soon began to return, but with diminished force, and they continued slowly to abate. Injections of warm water with castor oil were administered. About eleven o'clock at night he drank a gallon of warm water, and became comparatively easy; he slept fairly, but his slumbers seemed to be occasionally disturbed by spasmodic pains.

15th, A.M., 6 o'clock.—He has not got up, nor been seriously in pain since midnight. We offered him carrots, a few of which he took, and searched about for more; but we suffered him to eat only a few of them. I ordered a warm bran mash to be made for him with a few carrots shred in it, and directed that he should not be disturbed until ten o'clock, when all hands were to be mustered.

10 o'clock.—There has not been any evacuation. He is easy, takes a few carrots, and picks a good deal of his straw. I was unwilling to hamper and fight with him in order to get down more castor oil, or to disgust him with its taste, and therefore hollowed out a carrot, and concealed in it fifteen grains of calomel and four grains of opium. He took it, and, although he did not quite like the taste of drugged carrot, it was fairly swallowed. He was then roused and turned out into the paddock.

We thought that by this we should ascertain his degree of strength, and the paddling about the paddock might induce an

evacuation. He at once set himself to work to nibble the grass, and so employed himself for an hour. I then desired that he might be kept out as long as he continued on his legs and fed, but when he became leg-weary to be returned to his den. In another half hour he began to look about for a place to lie down on. He was led into his house warm water was offered to him, which he drank, and he ate some tares. No evacuation.

5 o'clock.—Easy; occasionally eats, but no evacuation. All our strength was mustered, and three pints and a half of castor-oil were poured into him, and washed down with warm water. He almost immediately began to feed on his tares, with a small quantity of which he was occasionally supplied, and when he had no tares he ate his straw.

9 o'clock.—Easy; apparently doing well, but no evacuation. He has now more than seven pints of castor-oil and forty grains of calomel in him. Let him alone until the morning.

16th.—An evacuation has at length been obtained, but not at all of a purgative character. The animal, however, has more of his usual appearance and habits, and we trust that we may regard him as safe. If, however, he has not another evacuation in the course of to-morrow morning, we must muster our strength and at him again.

17th.—Evening coming on, and there being no other evacuation, and the animal becoming uneasy and seeming every now and then to make ineffectual attempts to void his dung, the strength of the garden was mustered, and three pints more of castor-oil were given. He was scarcely released from the ropes ere he voided a small quantity of fæces of a hard consistence.

He now seemed to be perfectly easy; he fed when he was coaxed to eat, and occasionally ate a small quantity both of tares and hay of his own accord, yet his appearance is not satisfactory. He is continually lying down; he gets more dull—more manageable, because he is more dull and stupid. He has a strange quantity of purgative medicine in him, but it has not had the desired effect. His bowels must be opened. Let the day pass, and see what it will produce.

9, P.M.—No evacuation, and he is in the same dull listless state. Two pounds of Epsom salts in solution, with two drachms of ginger, were administered. He had the whole of it.

18th.—There has been an evacuation in the night, small in quantity, but hard. The animal is far from being in a satisfactory state. He has not his usual appetite. He lies lazily about, and his mouth and muzzle are hotter than they should be. I sometimes think the bowels should be still more opened; yet he has a strange quantity of medicine in him, and I am somewhat

afraid to go on. I may rouse that which I shall be unable to subdue. Give him plenty of warm water, but no more medicine to-day.

19th.—Very little change. He appears to be quite easy, but he lies about dull and listless, and he does not eat more than half his usual quantity of food. There has been another evacuation, but it was small in quantity, and hard. Try him, however, another day before he has more physic, and tempt him with as many carrots and as much green food as he will take.

20th.—Scarcely any change: we must no longer play with the case. A pound and a half of Epsom salts and three drachms of ginger were given.

21st.—The state of the evacuation just the same; but he feeds better, looks better, and is evidently improved. Give half a pound of the Epsom salt every night until the bowels are in a purgative state.

22d.—Last night he began to call a little for his food. The first time he had done so since his illness. This morning as soon as he heard the keeper he began to grunt lustily for it. He eats as well as ever, and anything, and toddles about his place in his usual manner. Dr. Marshall Hall, Mr. Bennet, and Mr. Yarrell met the medical superintendent in consultation respecting him. We determined not to give him any more medicine at present, but to see what diet would do—to lessen his quantity of hay, and to give him as much mash, and carrots, and green food of various descriptions, as he was disposed to eat. He is, indeed, much better, and I trust that we may now regard him as safe.

23d.—A most gratifying improvement has taken place. He will eat anything that we give him. He is regaining all his usual habits: in fact, *he is well*. We will gradually diminish his quantity of rice—take something from his hay, and supply him with green meat—lucerne, if we can get it, or tares, or carrots; yet not over-feeding him at present, even with these.

24th.—Doing perfectly well,

30th.—Well and hearty.

Sept. 17th.—He feeds well, and is in good spirits; but he begins to eat his dung and lap his urine; and these were precursor symptoms of his last illness. Give him two quarts of castor oil in his water.

18th.—He took his oil very fairly, but it has not operated; and although not absolutely ill, he is dull, and does not feed well. Give a pound and a half of Epsom salts dissolved in a bucket of water.

19th.—It was impossible to give him his medicine; as soon as he had tasted, he began to fight furiously against it, broke his

collar, and the ropes by which he was confined, and it seemed as if he would have had the beam and the very house down. He was therefore released from all his shackles.

Two hours afterwards he was evidently better, and had been amusing himself by trotting about. He has had two or three evacuations, but he does not eat quite so well as usual. Let him alone and watch him.

20th.—Apparently well.

FILARIÆ IN THE BLOOD OF A LIVING DOG.

By MM. GRÜBY and DELAFOND.

THESE gentlemen have communicated to the Academy of Sciences the discovery of entozoa circulating in the blood of a strong and healthy dog. Physiologists have for a long time been aware of the presence of certain entozoa in the blood of reptiles and fishes ; but this is the first instance in which they have been detected in the blood of a *living* mamma. It is of high importance to physiology, pathology, and natural history, to shew, not only the existence of worms in the blood, but also their circulation in this fluid in the animals that come near to man in the scale of organization.

These entozoa have a diameter of 0.003 millimetre, and a length of 0.25 millimetre. They are transparent and colourless. The anterior extremity is obtuse. The posterior or caudal extremity is terminated by a very slender filament. At the superior part may be observed a small round depression, 0.005 millimetre long, which may be considered as the buccal fissure. Their motions are very active. Their life has been prolonged ten days after the blood has been taken from the vessels and exposed to a temperature of 15° centigrade, or 59° Fahrenheit. They swim among the globules of the blood with great vivacity, exercising an undulating movement.

MM. Grüby and Delafond found them in the blood taken from the coccygeal arteries, external jugular veins, capillaries of the conjunctiva, mucous membranes, skin, muscles : in fact, everywhere this liquid was found to contain them. The urine and other excrementitial matters did not contain them. The diameter of these entozoa, being less than that of the blood corpuscles, enabled them to circulate through the capillary vessels.

Comptes Rendus and Physiological Journal.

THE POISONING OF HORSES BY GROOMS AND CARTERS.

By Mr. EDWARD HARRISON, Worksop.

[The facts stated in the following letter ought to be made generally known. We copy the letter from the *Nottingham Journal*.]

“Sir,—I BEG leave through the medium of your paper, to draw the attention of your agricultural readers to a fact which may not be generally known. Grooms and other servants having the charge of horses have long been in the habit of giving medicines to the animals under their care, for the purpose of producing a good coat or a clear skin; and, were the practice confined to the administering of simple drugs, little objection could be made to it; but when your readers hear that arsenic, in large and uncertain quantities, is frequently administered by parties who, apparently, are ignorant of the deadly power they are wielding, I think they will concur with me in the opinion that the fact (for such it undoubtedly is) cannot be too generally known, or the practice of servants presuming to give such deadly medicines too much deprecated.

“Mr. Skelton, of this town, lately lost three horses in as many weeks, and at the time no suspicion was excited of the real cause, the veterinary surgeon suspecting that they had been poisoned by water hemlock. Mr. Skelton has since found the fatal medicine in the possession of his waggoner, who was severely reprimanded by the magistrates of the Worksop bench, and fined in the amount of all wages due to him.

“P.S. Since the above was written, arsenic, by analysis, has been found in the contents of the stomach of one of the deceased horses.”

A CURE FOR GLANDERS.

[A FEW days ago I received the following tempting offer. It caused a smile on my lips, as it probably will on those of my readers. I have the address of the person, if any one should wish to be possessed of so tempting an article.—Y.]

Sir

through reading the newspapers i se an account of a Glanderd Horse as i have got a Receipt above one Hundred years old for the Cure of Such Beast and Seing that you was to Be Consultred for the cure of Cattle i have taking the Liberty of riting to you to know if you will Purchase it.

Sir yr Obt

C. M.

THE
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THE INTRODUCTORY LECTURE OF MR. FIELD AT
THE COMMENCEMENT OF THE VETERINARY
SESSION OF 1843-4.

Mr. President and Gentlemen,

TWELVE months have elapsed since we had the satisfaction of listening to the eloquent Oration of Mr. Thomas Turner, and we have now met once more to celebrate our anniversary.

If we take a retrospect of the veterinary art some fifty years ago, and compare the worse than Cimmerian darkness in which it was at that time involved with the brighter and more wholesome atmosphere with which it is at the present day surrounded; if we mark how it has broken through the meshes of ignorance in which it was so long entangled, and how it now stands out in bold relief, acknowledged by the professors of human medicine as a sister art, I would ask, have we not just cause for encouragement? It is, indeed, a subject for gratulation, and should serve to stimulate us on our onward course.

That a new era has, within the last few years, dawned upon us, the most sceptical must allow. Of this fact we need no stronger confirmation than the circumstance of so many highly-gifted individuals having risen like stars in our horizon, who, by their writings, have added a lustre and dignity to veterinary science—have contributed, in an eminent degree, to satisfy the cravings after knowledge which have become daily more and more evident; and have, by their labours, afforded facilities to our younger brethren which cannot be too thankfully appreciated, and to which the pupil of former days was an utter stranger. Of living authors in our own country, the names of Blaine, Clark, Dick, Morton, Percivall, Spooner, Turner, Youatt, and of many others, will not soon be effaced from the memory of the veterinarian; and, as regards France, I may refer to Buchoz, Chabert, Dupuy, Flandrin,

Girard, Hurtrel D'Arboval, and Huzard, in order to shew that the cause of veterinary science is not lost sight of in that country, and that the gentlemen I have just named have, by their zealous exertions, assisted materially in its growth and development.

In reviewing the transactions of the Veterinary Medical Association during the past year the mind is filled with pleasing anticipations of the amount of good likely to accrue to the profession through its means; and we rejoice at its present palmy and healthful condition. Our Journal, so ably conducted by my excellent friend, Mr. Morton, teems with a variety of useful information. Several new and valuable papers enrich its pages, as well as the accounts of many highly interesting cases—the produce of our weekly meetings. I am confident that I only echo the sentiments of every lover of our art when I assert, that we owe a debt of gratitude to those gentlemen who have so generously and disinterestedly stepped forward with the fruits of their labour and experience. These papers and cases, however important and instructive they may be, both pathologically and physiologically, do not of themselves alone absorb the entire interest of our periodical meetings. The discussions to which they give rise are sometimes of inestimable value; for we glean thereby the opinions of practical men, and facts, which might otherwise have remained for ever dormant, are elicited, and truth, the great end of all philosophic research, is in this way brought to light.

When it was first determined upon by the Association to publish their "Transactions" themselves, a fear was expressed by many among us, that such a proceeding would assuredly militate against the success of "The Veterinarian" (a result which all would have deplored), as an impression prevailed that sufficient matter could not possibly be obtained for the supply of two periodicals. I need not remind you, gentlemen, how agreeably those forebodings have been dissipated, nor how unjust and unworthy an estimate would have been formed of the abilities, as well as of the indomitable spirit and perseverance of the talented editors of the latter Journal, if the decision of the Association had been influenced by any such idle fears. How many articles have appeared in either one or other publication which only required the force of circumstances to tempt from their concealment, and which otherwise would have been lost to the profession! That such is the case no one can doubt; and I would, moreover, venture to express my conviction, that some of the most instructive and, at the same time, the most interesting numbers of "The Veterinarian" have made their appearance since the separation took place; plainly demonstrating that the Association acted with admirable judgment and foresight in the step they thought it right to adopt;

and indicating not only the progressive advancement of veterinary science, but also that we possess within ourselves certain sources of information with which we were before entirely unacquainted.

We must not imagine, gentlemen, because much has been effected towards emancipating our body from the thralldom of ignorance, that our labours are completed, and that we may now rest idly on our oars;—far otherwise. If we cast our eyes around, we shall discover many a dreary waste, many a barren fallow field, and many a wild uncultivated spot, that have never known the blessings of seed-time or harvest. Believe me, much still remains to be done, and ever will; and it is to be hoped that those enlightened and experienced gentlemen, who have hitherto lent us their timely assistance, will not slacken in their ardour, but still continue their praiseworthy labours with the same steady and unremitting zeal. It is impossible, gentlemen, for us to remain stationary: we must either proceed or retrograde. We must either follow in the stream of universal advancement, or be content to fall back into our former state of unenviable insignificance. It is only by pressing forward that we can hope to arrive at the goal of an honourable ambition. If we disregard our present advantageous position in society; if we evince apathy, or lukewarmness, or wavering in our course, our prospects will again become blighted, and our profession may have, for the second time, to struggle through a long night of darkness and of ignorance.

A cursory glance at the history of veterinary medicine will soon discover that it was a subject by no means neglected in ancient times, as is evidenced by the writings of Xenophon, Hippocrates and others among the Greeks, and by several authors among the Romans. Of the latter, I need only refer to the poet Virgil; for whoever has read the truthful and beautifully graphic account he has given of the diseases incidental to cattle in general, and his masterly description of a fatal distemper that attacked the dumb creation in former ages, must be convinced not only that the veterinary art was known during the Augustan period, but that it had arrived at considerable eminence, and was not confined to the study of the horse alone. In fact, the whole subject matter of the 3d and 4th Books of the *Georgics* bears the stamp of an author of the nineteenth century, rather than of one who flourished shortly prior to the time of our Saviour.

I should not have referred to so trite a subject as the early history of our art, but for the purpose of impressing upon you the necessity of not remitting your exertions, and reminding you that, although our art flourished in the olden times, it afterwards fell into disrepute, and was almost forgotten. What has once occurred may happen again. From a knowledge of the past we learn how to

steer our course for the future—what to shun and what to pursue. The mind, like the body, requires nourishment and exercise, or its faculties become enervated, and it sinks into a state of torpid listlessness and indifference; and thus the object which ought to hold a prominent place in our duty, and to interest most especially our affections, loses its charm and its influence, and has no power to incite us to action.

The veterinary surgeon, whose laudable ambition would lead him to attain to excellence in his art, and to earn well-merited fame, has no idle task to perform. With him there is no halting. His path is one of constant and continued progression, of assiduous application and of severe study. In the first place, he registers every case he may be called upon to attend, and he notes down each symptom as it presents itself—not in a desultory or hasty manner, but with due regard to method and regularity. He watches carefully and anxiously the effects of the various remedial agents he may have recourse to, so that, upon any future and similar occasion, upon reference to his *note-book*, he may know which to employ, and which to reject; and if, in spite of all the skill and attention he may have exercised, the case should terminate unfavourably, and the patient should die, he has the satisfaction of feeling that the result could not be attributed to any negligence on his part. But his office does not conclude here; for now comes the post-mortem inquiry—a most essential and paramount duty—which under no circumstances whatever does he venture to neglect; for by this he not only makes himself acquainted with the exact seat and extent of the disease, and satisfies himself as to the soundness or incorrectness of his own preconceived opinion, but he, at the same time, receives a most valuable lesson of morbid anatomy, a most important advantage, frequently denied to the human practitioner.

In the surgical portion of his profession he is particularly studious to be neat in his operations, and to use as much dispatch as is compatible with sound judgment and the safety of his patient; add to which, he always endeavours to preserve his self-possession. He well knows that by disregarding these three essentials, and by giving way to an awkward and slovenly manner, his reputation must eventually suffer, and his future success in life be, in a great measure, if not altogether, impeded. It was well remarked by the late Sir Astley Cooper (a name ever dear to the veterinarian, and whose opinions cannot fail to command his respect and attention), that a man's skill was frequently judged of "by his manner of bleeding, or from the application of a bandage; and it sometimes happens that 'the hand spoils the head*.'"

* Introductory Lecture.

So much for the practice of veterinary medicine and surgery. Do the duties of the practitioner end with his attendance upon his patients? Are his leisure hours to be spent in idleness? Has he no farther obligations to perform? Is he satisfied, I would ask, with the course of studies he pursued whilst at the College or elsewhere? Most assuredly he is not, however favourable they may have been in assisting his introduction into life. He feels, when he enters upon his professional career, that his former studies were only preliminary to a more enlarged and extended course of reading. Instead of sitting down contented with the knowledge he acquired at the schools, he now takes a wider range. As far as time and opportunity will permit, he makes himself familiar with every work that treats of particular disease; and thus he is enabled to compare the opinions of those who have preceded him in the field of research with his own experience. His inquiring mind allows nothing to escape, however trivial at first sight it may appear, that may tend to perfect him in the knowledge and practice of his profession; and thus he heaps up stores of information, to be brought into active play in his daily rounds of practice. It is by such means that the veterinary surgeon raises himself to eminence, ensures the confidence of the public, and evinces, beyond the possibility of cavil, his qualifications for his calling, both by practical knowledge and by scientific attainments.

I have great pleasure, gentlemen, in bearing my testimony to the improvement that has latterly taken place in the educational department of the Veterinary College, whereby a higher class of pupils graduate at that establishment than at any previous period: nor let me forget to express my hearty concurrence in the appointment of a Professor of Cattle Pathology in the person of our talented friend, Mr. Simonds. No one can doubt the propriety of this step; and the only matter of surprise to my mind has been, that some such appointment had not taken place years ago. We can scarcely speculate too sanguinely upon its beneficial results. The energies of the veterinary surgeon will no longer be cramped within their former narrow and contracted sphere of action. His mind will occupy a wider compass, and he will grasp at more diffuse acquirements. His studies will doubtless embrace a more general knowledge of comparative anatomy and physiology; and various sources of instruction will be now opened to him, which, however freely they may have been drawn upon by the human physiologist, have hitherto been to him little other than a sealed book.

It may appear a humiliating confession to make, yet still it is no less true, that until within a very few years, for our entire knowledge of animal physiology and comparative anatomy, and for al-

most every important fact connected with and elucidative of those sciences, we were indebted to our medical brethren in this country and in France.

In order to convince you of the importance attached to the study of comparative anatomy and physiology by the College of Surgeons, I would refer you to the museum belonging to that learned body. Who that visits this princely collection for the first time, can avoid being struck with the vast majority of preparations connected with the sciences to which I have just made allusion? but how much is his astonishment and admiration increased, when he learns that of these at least three-fourths are the produce of the unassisted labours of one man?—that to the consummate skill and indefatigable perseverance of the late John Hunter that learned body are indebted for, perhaps, the most splendid monument of scientific research that ever adorned and enriched this or any other country; and let it never be forgotten, that that great man was one of the earliest promoters, patrons, and benefactors of our College, shewing incontrovertibly the importance which he attached to veterinary science. In this collection the common observer, unlearned in the mysteries of science, cannot fail to discover beauties: but the eye of the philosopher alone can distinguish their real value; for here he finds, arranged in regular series, the varied gradations of nature, from the simple zoophyte, whose thread of existence hangs between the animal and vegetable world, until he arrives at the most beautiful, the most perfect, and at the same time the most complex, of created beings,—man himself.

Gentlemen, if a solitary individual, and he, commencing the study of his profession at a time of life when students in general are expected to have perfected themselves in the groundwork of theirs, and labouring under disadvantages that would have damped the ardour of any ordinary mind, being left in very early life to his own resources, his education wholly neglected, and bound to a business that he detested;—I say, if one man alone, under such untoward circumstances, has been able to achieve so glorious a work, what ought not to be expected from us as a body? Very many of the researches of that great man are of inestimable value to the veterinary surgeon; but, independent of their intrinsic and individual merit and worth in a scientific point of view, they serve as beacons to guide and direct him. They tell him, in language which cannot be misunderstood, that whatever difficulties may beset his path, however adverse fortune may at times appear, still, if he perseveres with diligence, and if he maintains a determinate resolution to prosecute his calling with honour and reputation, he will eventually succeed.

It may be the opinion of some, that the researches of John

Hunter belong more exclusively to the office of the veterinary surgeon; but I would have such persons to recollect, that, at the time they were undertaken, there was scarcely a single member of our body who could have afforded him any assistance—to so low an ebb had our profession at that time fallen. I would moreover add, that in the prosecution of scientific inquiries there is no such thing as exclusiveness. The book of nature is open to all; so that those who run may read. In the field of science there are no enclosures or preserves for the benefit of the favoured few. No line of demarcation obstructs the progress of the inquirer after truth, as if to say, “thus far shalt thou go and no farther:” all, without distinction, are admitted, and are entitled to range with unmolested freedom and impunity; and may at all times indulge their curiosity, and satisfy their thirst after knowledge, in any part of her vast and illimitable domains.

“The proper study for mankind is man*.”

So said the poet and moral philosopher; and he followed up his thesis by a most beautiful reference to the instincts of inferior animals. He pursued his argument with exquisite skill, and he proved irrefragably the advantages man sustained in the knowledge of the habits and peculiar faculties of these lower and more humble denizens of our globe.

Thus, then, to man the voice of Nature spake,—
 “Go, from the creatures thy instructions take :
 Learn from the birds what food the thickets yield;
 Learn from the beasts the physic of the field;
 Thy art of building from the bee receive;
 Learn from the mole to plough, the worm to weave;
 Learn from the little nautilus to sail,
 Spread the thin oar and catch the driving gale*.”

The professor of human physiology pursues a similar method of ratiocination; but he uses a more direct, at least a more practical and tangible, mode of inquiry. He has recourse to the same instruments,—he makes himself acquainted with their various structures, their respective functions, and the laws of nature, as they are found in these lower orders of creation; and then, by analogical inference, and by an ingenious process of inductive reasoning, he makes apparent the laws that govern and regulate the functions of life as they exist in man.

I now, gentlemen, approach a portion of my address in which I would wish, with every feeling of diffidence, to intimate to the learned Professors at the Veterinary College a defect which I be-

* Pope's Essay on Man.

lieve still exists in that establishment:—I allude to the facility with which pupils are admitted in the first instance. If any young man presents himself for admission, no matter how ignorant he may be; if he has never looked into a Latin grammar, and if he is a perfect stranger to the French tongue; if his acquaintance with mathematics and with English literature in general is on an exact par with his knowledge of languages; in fact, if his education has been altogether neglected, and he is in all respects as unfit a candidate for a liberal profession as can be well imagined,—the doors of the College are, notwithstanding, opened wide to receive him; and he is, without a question asked, at once admitted as a pupil. Now this I must regard as a sad oversight. It is a practice that does not hold in the medical profession, and it is provided against by the laws of the Pharmaceutical Society just established. Why should it be maintained in ours? more especially as we pride ourselves in being considered on a level with our brother professors and practitioners in human medicine—a position we cannot expect to preserve, in these enlightened times, if we disregard the immense importance and advantages of general education, as a means of enhancing the character of the veterinarian, and of upholding him in his acknowledged sphere of society. In the army his rank is well known. In London, the enlightened veterinary surgeon is on an equality with the professors of other liberal arts. In country towns and large villages you find him the companion of the clergyman, the surgeon, the lawyer, and not unfrequently the guest of the gentry in his own immediate neighbourhood. Such was not the case in those dark ages to which I have already alluded, during the interregnum—so to speak—of the veterinary art, when the patient was handed over to the tender mercies of the ignorant empiric, who possessed, as a matter of course, impudence and presumption in abundance, but not one-half the intelligence of the animal for which he was called upon to prescribe; and which was thus left to the chapter of accidents to recover or otherwise, as chance might direct. Now, I would ask, what was this man's station in society—what his pursuits—who his confederates and companions? The question is of easy solution. His *locum tenens* was the tavern. There he might be seen, enveloped in fumes of tobacco, the associate of jockies, of grooms, and of the lowest grade of mechanics. His name was a by-word for every thing low and contemptible. He lived unrespected; he died unregretted. But let us cast a veil over this part of the picture. We may rejoice at our escape from the state of bondage of our ancestors, and we may congratulate ourselves upon the mighty change that has come over the spirit of our times, giving to our profession something like a “local habitation and a name.” We may refer

to the past as to a matter of history, but not one of us would wish to see its reality embodied in these latter days of intellectual refinement and civilization.

Who, that has once basked in the sunshine of science, or has tasted the sweets of intellectual intercourse, would wish again to enshroud himself in the mantle of ignorance, or would look back with any other than sentiments of disgust and abhorrence upon the by-gone days of Gothic barbarism? Who, that has witnessed the incalculable advantages that the man learned and an adept in his profession possesses over the illiterate and unskilful, does not feel a powerful incentive to exertion, and would not strive with unwearied diligence, heedless of all impediments, to climb the hill of knowledge, however rugged may be the path, or however steep and difficult the ascent?

Before I conclude, gentlemen, I would mention a fact in connexion with the more recent history of our art. In many of the physiological investigations of late years, recourse has been had to the experienced veterinarian both in this country and in France; and, in numerous instances, the experiments and the dissections have been performed wholly by him. This circumstance speaks volumes, and places our profession in a new and interesting light. We can now join hands with our medical friends on more equal grounds, and on terms of greater reciprocity. We have drawn freely on the labours and resources of the human anatomist, and we are now enabled to repay some portion of our debt in kind. While we acknowledge the hand that has assisted us, and promoted our advancement by lifting us, as it were, from a state of abeyance to one of honour and distinction, we shew the sincerity of our gratitude by offering in return some of the fruits of our own experience. It is to be hoped that, by this means, a spirit of friendly emulation will be engendered, tending to mutual profit, and which will be instrumental in advancing the cause of medical science in all its various branches.

I have now, gentlemen, fulfilled the task I imposed upon myself at our last yearly meeting, although in a less perfect manner than I could have wished. I have had the pleasure of congratulating you upon the advanced state of our art in general, and of our Association in particular. At the same time, I have not hesitated to forewarn you of the danger that would accrue from an overweening confidence in our present security; nor have I failed to point out the necessity for constant and unremitting zeal and watchfulness, lest we lose the vantage ground it has been our good fortune to attain. I have attempted, to the best of my abilities, to describe the important duties of the veterinarian in the practice of his profession.

The system of education at present pursued at the Veterinary College has been the subject of my warmest eulogy, more especially as regards the introduction of a more comprehensive course of study; from which I have been led to bring under your notice the Museum of the College of Surgeons, and from a reference to its contents, and from the example of the late John Hunter, it has been my earnest aim to incite one and all to a more intimate acquaintance with comparative anatomy and physiology; and although I have felt it my duty to notice a certain defect which still exists—I mean the too indiscriminate admission of pupils to the College—I have been actuated by the firm conviction of the paramount importance of some little knowledge of general literature, as a means of introduction into society, and of enabling the veterinary surgeon to maintain his character and position therein; for I hold that he whose discourse is compressed within the contracted bounds of his daily vocation, would not prove the most eligible nor the most inviting companion for the man of refined taste; neither would he feel himself at ease in the society of men whose intellectual endowments have led them to range through the more flowery fields of general literature and polite learning.

Finally, gentlemen, I may remark, that it is always with feelings of unalloyed pleasure that I anticipate these our annual gatherings. I consider them a boon to our profession. Upon these occasions we meet as brethren. A communion of mind may be said to prevail, and a singleness of purpose to animate all. Both at our yearly and hebdomadal meetings, all minor differences or petty jealousies (if any thing so ridiculous may be supposed to exist) are merged in the one grand object for which we assemble;—viz. the advancement and diffusion of veterinary science. A bond of union is formed, which, so long as it is preserved, will constitute our greatest security.

By acting upon a solid fixed principle we ensure the prosperity of our undertaking. Without this precaution, we could expect neither compactness nor durability, and the whole superstructure would of necessity totter: on the other hand, while the foundation continues good, the parts depending upon it will be proportionably strengthened, and the whole fabric more firmly and securely knit together. Thus, gentlemen, you will perceive that increased knowledge and union among ourselves are the key-stones upon which we have to depend for support.

LECTURES ON HORSES.

By WILLIAM PERCIVALL, M.R.C.S., *Veterinary Surgeon to the
First Life Guards.*

MUSCULAR MOTION.

THE property possessed by an animal body of locomotion or self-movement is of a nature altogether different from any we witness in machinery: how ingenious soever a piece of mechanism may be, and imitative of the movements of the vital machine, there is still this essential difference between them—that one moves through an extrinsic force or power communicated to it; whereas, in the other, the power of motion is created or generated. It is, in the strictest sense of the words, a self-moving machine, the other being but self-moved: and in the muscles reside the source of motion. They, during life, possess power of *contracting* or shortening their lengths, through which simple change all the movements of the body are brought about. What it is that enables them to contract, what alterations of structure or arrangement they undergo during contraction, is a question that has puzzled those who have made themselves best acquainted with their intimate texture and organization. We must, therefore, content ourselves with a knowledge of the established facts, that the self-moving power resides in the muscles, and is dependent on their vitality; dead muscle, or flesh, being devoid of any such property.

The contraction of a muscle has the effect of bringing nearer together the parts to which its ends or extremities are attached; either both attachments move in approximation, or, one being fixed, the other moves towards it. The tail, e. g. (which is a good exemplification of muscular action), is raised by the contraction of muscles running from the croup to its upper surface, called, from their office, the *erectores coccygis*; and is depressed by muscles running underneath, from within the pelvis to its under surface, named the *depressores coccygis*. There are likewise two other muscles, one on each side, having the power of curving or flexing the tail around the quarter, either to the right or left side, according as the right or left muscle is in action. Altogether there are eight—four pairs of—muscles belonging to the tail: two for raising it, two for depressing it, two for forcibly compressing it against the rump, and two for curving it either on one side or the other. Less than eight muscles would have proved insufficient for the

various movements of which the tail is capable, and with the eight, admirably arranged as they are, the tail may be made to perform movements in any radial direction of a circle; and, indeed, by the alternate action of them, to describe a sort of circular motion, such as we every now and then perceive when the horse is switching off flies, or making efforts to rid himself of any source of annoyance or irritation.

In the ordinary or natural manner in which a horse carries his tail, the action of the muscles may be said to be nicely balanced; none are forcibly contracted—none completely relaxed—all are in that semi-contracted, semi-relaxed condition, which, by physiologists, is characterized as their *tone*: and this tone is said to be *good* or *bad* according as, from previous exercise and other circumstances, they are in a condition to do much or little work. While a horse is going, the coccygeal muscles participating in the general action of the body, the tail becomes partially erect; but, while in the stable, every muscle ceasing to act, it droops from its own weight, and lies at rest against the quarters: and this is, in truth, the only *real* relaxation or repose these muscles experience; for, while the erectors are elevating the tail, the depressors are not passively relaxed, but, like hands employed in moderating extension, lest the part be over-stretched, are engaged in keeping up a proper degree of counter-extension. The operation of knicking plainly elucidates the effects of muscular action: the depressor muscles of the tail being severed, the erectors, every time the horse is set in action, elevate the tail to the uttermost, and maintain it thus preternaturally erected, there being no controlling powers to moderate the elevation.

Another effect of muscular contraction well exemplified by the tail, is, the prodigious force muscles are capable of exerting. All practical horsemen full well know that, to raise the tail of a strong-docked horse, requires often more than the strength of the strongest man's arm. Horse-dealers and grooms, indeed, and connoisseurs in horses, often take the strength of the dock (of the tail) as an estimate of the *general* muscular powers of the animal; and the criterion is one by no means to be despised, it being but reasonable to infer that great strength in one part would not be unattended with correspondent power in others.

The limbs of the horse furnish us with beautiful illustrations of the force and velocity, extent and variety, of muscular motion. In the fore-limb no less than thirty muscles are employed; eighteen being occupied in the movements of the shoulder and arm, the remaining twelve with those of the leg and foot. When speaking of the bones composing these parts, I said that between the shoulders the fore-quarters of the body were in a manner suspended

through the medium of attaching muscles. There is one muscle especially designed for the performance of this function—the *serratus magnus*—a muscle of vast magnitude and power, which, though by anatomists regarded but as one, might with just reason, by the physiologist, be described as many; inasmuch as by such a supposition alone can be accounted for its unwearied discharge of the laborious duties assigned it. Its twelve distinct origins from the cervical vertebræ and ribs ought to be considered as twelve distinct portions of it; some of which are in continual action, while the others are recruiting their tone by repose. Another important duty performed by this muscle, and one in which it is probable most if not all of its divisions are engaged, is that of, during the action of the fore-limbs, fixing the central part of the scapula to the ribs while its upper and lower ends revolve, in segments of circles, backwards and forwards; the other muscles attaching the scapula to the trunk being employed in effecting the revolving movements.

With the exception of the joint at the shoulder, between the scapula and humerus, the joints of the fore-limb are so constructed that they can hardly be said to admit of any motions beyond those of flexion and extension; and therefore a very proper division of the muscles moving them has been made into *flexors* and *extensors*. It might be imagined that one or two of each sort would be all that was required for such simple movements; when, however, it is considered that the knee-joint admits of some trifling lateral motion, and that through it some variety is given in progression to the direction of the leg, it will be seen that more became necessary to give steadiness and precision, as well as due force and effect, in action. The flexor muscles are more numerous and powerful than the extensors, because all action in the fore-legs consists in flexion: during extension the animal is standing still. There is an important extensile movement in the arm performed by the *extensor brachii*, whose point of insertion is the process we call the *elbow*, and which, in the living animal, is recognized by the remarkable plumpness of flesh immediately above that process, and before the girthing-place. Every "judge" of horses knows that prominence at this part constitutes an excellent "point;" it being of the very first consequence that the arm should be extended with force, and be firmly maintained in this extension, both on account of the projection of the limb in action, and for sure and safe alighting and standing upon it. When the horse is throwing his fore-legs straight out in the gallop, or projecting them, *dart-like*, in the trot, this is the muscle which, as far as the arm is concerned, is chiefly employed; therefore strength of action, if not extent of projecture, will mainly depend upon its magnitude or efficiency.

The muscles designed for the motions of the leg and foot are

situated upon the arm—in the hind extremity upon the thigh; there being, as I before observed, no muscle or flesh, but tendon or sinew alone, below the knee and hock; and these muscles are inserted into the uppermost part of the leg, as close as possible to the centre of motion—the knee or the hock. Considering the length of the lever from either of these parts to the extremity of the hoof, it will at once appear to what a great disadvantage these muscles are acting; when we come, however, to reflect, that the tendons could not have proceeded in the straight or direct line to the foot, on account of the infraction upon the form of the limb, and that by the present admirable arrangement, though power be lost, velocity of movement is gained, and gained in a manner to compensate even for that loss of power, we shall discover that an all-wise hand has in the construction of these parts not only overcome every difficulty, but at once accomplished every desirable object. For every half inch of contraction of the muscle, and corresponding half inch of space through which the leg revolves at the knee, the hoof at the extremity of the lever will move through a space equal in extent to as many feet, and the velocity of motion being augmented in increasing proportion, it is evident that the force with which the foot strikes the ground must be greater even than if the muscles had been prolonged and attached to the foot itself. The increased weight of the horse-shoe at the very extremity of this lever will, when once set in motion, by adding to the momentum, like the weight upon the fly-wheel, augment still more this force; though, of course, it will require greater exertion in the muscles, and so tend to tire the animal all the sooner. Short cannons, in reference to muscular action, are, therefore, preferable to long ones, because their leverage is less, and because with long arms there is greater length and strength of muscle; though it will be seen, from what has been said, that, in a mechanical point of view, they are not calculated to move with the same degree of velocity as long ones*.

The muscles of the back, loins, and haunches, are remarkable for their size and power, and for the important parts they perform in progression. It has been before observed, that, for strength, the loins should be “broad and rounded, the haunches fleshy, and the thighs let down to the hock†;” all which amounts to nothing more than saying, that the muscles constituting these parts should be large and powerful, it being quite impossible that a horse of slender muscularity in these—the most important of all—parts, in proportion, can either “go,” or “maintain the pace” as a hunter or racer;

* See what has been said about long and short arms and cannons in the description of the bones.

† In Lecture I.

the loins being the parts from which, when the hind feet have been projected forward and placed to serve as *fulcra* upon the ground, the spring is made which impels the whole machine onward, and the haunches being the chief agents in the propulsion. In racers, as has been observed on a former occasion, the loins and hind quarters are considered as of paramount importance; in greyhounds, in the deer species, in hares, rabbits, &c., in fine, in all quadrupeds of speed, the same conformation is remarkably characteristic; plainly shewing whereabouts the power for fast and efficient galloping should be lodged.

Although we are unable to account for the production of muscular motion, the principles directing its agency on the framework of the skeleton are clearly those of mechanics; the lever being the power according to the laws of which locomotion may be said to be effected. The bones constitute "a series of levers," on which the muscles operate with more or less advantage and effect, depending upon their length, their position, their prominences or processes, &c. Of levers we know there are three kinds; and of each of them examples may be found in the animal economy.

For instance, the extension of the fore-limb is effected on the principle of that description of lever in which the *fulcrum*, or axis, or centre of motion, is situated between the moving power and the resistance or part to be moved; whereas, in the flexion of the limbs, both fore and hind, in general, the power holds the intermediate place. When the arm is extended, the elbow-joint becomes the *fulcrum*; the point of the elbow, to which the muscles are attached, the *power*; and the limb itself the *weight* or *resistance*. When the arm is flexed, the elbow-joint is still the fulcrum, but the power is now transferred to the radius, the resistance being the same: thus furnishing us with an example of a lever of another kind, one in which the power is intermediately placed. A third kind of lever is exemplified in the extension of the hock, the foot being upon the ground: the foot now becoming the fulcrum, the point of the hock the seat of the power, and the resistance or weight to be moved forward, falling down the shaft of the tibia operating upon the hock-joint. The same lever operates in the extension of the fetlock after it has been flexed in action for the purpose of pointing and fixing the toe in the ground, which then becomes the fulcrum, the power being exerted at the summit of the sesamoids, and the resistance bearing upon the large pastern. These laborious duties in the work of progression which the hind fetlocks, in concert with the hocks, have to perform, account for their failure in horses doing much heavy draught, or that have hunted or raced much in heavy grounds.

It being a law in mechanics, that any deviation of the direction

of the power from a perpendicular line to the arm of the lever is attended with a corresponding decrease of force, and that the nearer the power approaches to the parallel line with the lever the weaker its effect, so much of the force being consumed in efforts either to drag the lever against the fulcrum or force it off, it will at once appear evident at what a great disadvantage or sacrifice of power the muscles of the limbs, from their parallelism with the bones, are in general acting. This disadvantage, however, as I said before, is greatly compensated for by the velocity acquired by the length of the resisting arm of the lever, and the comparative shortness of that to which the power is affixed. Where power, however, is wanted, as in the hock and fetlock joints of the hind extremity, although celerity of motion is still preserved by the distance at which the fulcrum is removed from the power, the requisite force is gained by the proximity of the latter to the resistance. We now perceive the advantages derived from length of hock and length of elbow, and from broad or prominent fetlocks; we may also calculate to how much greater effect the muscles in the haunches and shoulders will act, where the bones are placed at right angles nearly to each other, and when, consequently, the power of the lever operates perpendicularly to its arm. In the case of the flexor muscles of the arm playing over the head of the humerus, and that of the extensors of the thigh playing upon the patella, pulleys are established, which, though of a nature too simple in themselves to afford any advantage as pulleys, yet increase the power of the muscles attached to them by giving a more advantageous direction to the power over the resisting arm of the lever. These beautiful contrivances are likewise attended with the convenience of permitting the muscles from which the power originates being placed out of the direct line of action, in situations where they accord with the contour and proportions of the limb.

RABIES.

By Mr. JAMES TURNER, 311, Regent Street, London.

Dear Sir,—You having devoted a long and valuable life to the pathology of the inferior animals—the canine species especially,—and having succeeded (in my opinion at least) beyond any other man living in Europe in the enlightenment of the world as to the true nature of that terrific disease, termed Rabies, or Hydrophobia, I am induced to trespass upon your valuable time, by addressing a few remarks within the compass of a short letter.

You may remember, or may have forgotten, that, several years ago, in a professional chat between ourselves, I suggested the propriety of operating by tracheotomy upon a rabid dog at the first indication of the disease being perceived. I gave you my rationale at the time, the why and the wherefore; you appeared to entertain the subject, but only observed in reply, "It is certainly worthy of a trial."

I am not aware that you or others have ever had recourse to the operation with this view, and therefore I feel impelled, by a sense of duty in the cause of humanity, to renew the subject.

Although this monster of disease yet rages uncontrolled even by you or by any other man in the known world when once developed, still you have the proud satisfaction of knowing that the doctrine you have promulgated has crushed the serpent while in its *germ* in almost innumerable instances among the lower animals, and, happily, in many a human being. I allude to your prompt dictum, as to the extirpation unreservedly of every atom of the bitten part and beyond it, and by having firmly added the salutary warning, that there exists no other earthly hope as a preventive.

This alone is a great triumph. By its *modus operandi* it also affords some clue as to the nature of the virus; for, unlike many vegetable and some animal poisons, very considerable time must elapse before the entire system becomes charged with this deadly virus, imbibed at the spot of inoculation, and therefore its dreadful consummation may be averted in almost every instance.

But when this animal poison, as in every other known contagious disease, is allowed to locate itself undisturbed for a sufficient time within any sensitive tissue, it possesses an irritating power which, by an established law of nature, excites a like action of the parts in immediate contact, which, in their turn, become an inexhaustible source of a disease *sui generis*.

Alas! when this direful scourge has invaded the tissues of the brain, and the entire nervous centres, no medical man in his senses, of the present day, dreams of an antidote or specific against the disease itself, but he assiduously and humanely exerts himself in combatting only the symptoms by palliative remedies, abating pain and diminishing excitement until death relieves the sufferer by exhaustion.

I have carefully watched the progress of this disease in all its stages, but more especially in horses, and my experience enables me to bear testimony also to your having disabused the public mind of a popular error—that of the brute animal being raving mad or insane. Such is not the case; he is conscious, although in the highest conceivable state of excitement.

This brings me to the burthen of my story; and I must frankly avow that I have yet to be convinced that the rabid animal of the brute creation has hitherto had afforded him what I conceive to be the only reasonable chance of enabling his constitution to wrestle with and in the end to wear out the malady,—I mean the aid of the tracheotomy operation.

I have already declared my conviction that an established law of nature prevails for the propagation of contagious disease throughout the animal kingdom; but, on the other hand, I have equal faith that there exists, in many individuals of every species, the gift of a repulsive power to rid itself of it to a certain extent, not excepting some of the class deemed incurable.

Spontaneous cures even of contagious diseases are not so rare as vain man imagines.

Spasm of the glottis is among the first alarming indications of rabies; it is never absent throughout the progress of the disorder, except at short intervals,—it invariably exists with redoubled fury at the close of this awful scene.

All modern writers appear to agree that the post-mortem appearances, on minute dissection, fail to exhibit morbid lesions commensurate with the outrageous symptoms exhibited during life. But I have myself invariably found, on dissection, intense inflammation of the larynx and pharynx and the adjacent parts, and have almost invariably read the same report from others.

Convulsive movements of the entire muscular system prevail at intervals throughout the progress of the disorder; but as all maladies have their favourite localities, so this appears to be concentrated about the nerves and muscles of the throat, most likely from an especial impression of a particular part of the sensorium.

Now I have long entertained the idea, though ashamed to confess I have never put it in practice, that an aperture in the windpipe, made sufficiently below the larynx shortly before the expected outbreak of the disease, might, by affording the tortured animal more of the breath of life during the paroxysms in point of quantity, as well as a little extension in point of time, by the prolongation of life, enable the system to rally, re-act, and accumulate that conservative force inherent to every individual, viz. the *vis medicatrix naturæ*, and thereby ultimately wear out and expel the invader. This may be thought Quixotic; but the case is desperate. Nothing ventured, nothing gained; and until I hear your critical reply, I cannot divest myself of the belief, that every hydrophobic patient has had his life extinguished—before this grand vital principle has been thoroughly dissipated—simply by the mechanical closure of the glottis from spasm of

those numerous and powerful muscles inserted into and encompassing the larynx—speaking briefly, *abruptly suffocated*, when not otherwise exhausted. Strangulation being induced, it is accompanied with starting eyeballs and violent muscular contortions: in fact, a set of symptoms are present such as would be exhibited by a hearty dog upon finding his throat suddenly fettered by the extreme twisting of a cord tightly around it.

When I have witnessed, particularly in rabid horses, the immense and long-continued cutaneous evaporation, sweating stages defying adequate description, it has thrust on my mind the conviction of a salutary effort of Nature—a spectacle exhibiting the last defensive throes of life at approaching death. I have sometimes been an eye-witness of protracted cases of rabid horses, with apparently an abatement of all the symptoms so late as the sixth day, and erroneously supposed that time was winning, when death has suddenly closed the scene.

I submit that we should not be discouraged by the failure of the operation in the first, second, or third instance; for, making the best of it, it may be of avail only in peculiar instances, such as I have just cited, where there is extra tenacity of life, such as an individual possessing within himself more than ordinary powers in resisting disease: but hitherto this grim tyrant has been no respecter of persons; when its venom had once reached the sensorium, the young, the old, the robust, the delicate, ALL have succumbed.

I am, my dear Sir, your's, &c.

A CASE OF POISONING SHEEP WITH ARSENIC, AND THE ANALYSIS.

Communicated by Professor DICK.

My dear Sir,

I BEG to inform you that, about a month ago, I was called to attend a stock of thirty-two cattle that had been poisoned (I should rather say destroyed) from having been washed with a sheep bath, for the destruction of a few vermin that had appeared upon them. They were washed on the neck, back, tail-root, and some of them between the hind legs.

One of them licked himself, and died in six or eight hours. The others were observed to lick themselves, and seven more of them died from the absorption of the bath through the medium

of the skin, some of them even more than a week after the application.

May I ask of you the favour, providing it suits your convenience, to have a package of the powder which composes the abovementioned bath analysed? My reason for begging the favour at your hand is, that my unfortunate employer is not a wealthy man, and his loss by actual death, and injury done to the twenty-four suffering brutes that survived, cannot be less than a hundred pounds, and, consequently, he is not at present very well able to pay a chemist for the trouble of analysing; while at the same time, and from the same cause, he is equally unable to bear the loss, if he can at all get by law that which justice, in my humble opinion, would at once award to him. For though — does not advertise his bath to be used on cattle, still, like all these abominable secret preparations, it is so lauded for utility, innocency, and safety, in the advertisements, as completely to have thrown the user off his guard, and thereby to have led to the misfortune in a very direct manner. For instance, he says in his advertisement, which is now before me, that it is “free from those corrosive poisons and sulphureous preparations so frequently used in other dipping stuffs.” Now, if free from poison, why should it kill cattle?

If it contains poison, surely there is imposition in issuing such an advertisement.

The post-mortem examination exhibited the most violent inflammation and destruction of every organ and membrane that secretes. The brain did not escape, and the stomach was much corroded, even in those who died from absorption of the poison.

Copy of Analysis of Powder above referred to, by Dr. Fyfe.

“I have submitted to chemical analysis the *sheep salve* sent to me by Mr. Dick, veterinary surgeon, and find that it contains very nearly two-thirds of its weight of white arsenic, along with potashes and a little sea salt.

“I consider this a mixture that ought to be used with extreme caution, owing to the enormous quantity of arsenic which it contains.

(Signed) “A. FYFE, M.D.,
“*Lecturer on Chemistry.*”

“Edinburgh, 13 June, 1843.”

P.S. I have not heard the result of any proceedings, nor have I received any further particulars.

W. D.

AN ACCOUNT OF INJURY RECEIVED BY A BULL IN THE ACT OF COITION.

By HENRY HUTCHINSON, V.S., *East Retford, Notts.*

To W. Dick, Esq.

Sir,—I WAS sent for twelve miles from hence to see a six-years old short-horned bull. He is a most valuable animal, and highly prized by his present owner. He has been under the treatment of a country farrier for two months prior to this time.

From what I can learn of the case, it appears that, about two months ago, in bulling a cow, she swerved from under him, and, by so doing, the bull's penis was bent nearly double. When he was again wanted he appeared to have much pain, and, at last, totally refused his office.

When pressure was applied by the hand on the perineum, close to the testes, it gave him slight pain, and the owner thought the part a little swollen. He, however, got so well, that he would bull his cows as usual for a few days, when he would again refuse them.

When I first saw him I could not detect any external appearances to account for it. I cast him, and attempted to draw the penis, but could not reach it with my fingers, the prepuce being too small to admit my hand. The appearance of the parts was as healthy as possibly could be. There was not any discharge, nor the least foetid smell. It seems that he must have injured the penis when the cow threw him, which would account for the return of his incapability after a few days' work. He has got several calves since.

My treatment was as follows:—I passed two setons down the perineum, and gave him a few doses of saline aperient medicine. He has not been under treatment for the last few weeks, but the owner is anxious that I should again have him under my care. I have recommended a long-continued application of stimulants to the perineum.

I think I have now stated all particulars, and shall feel particularly obliged, if you will not consider it too much trouble, or too great a liberty on my part, to solicit an early answer.

I am, Sir, respectfully your's.

PROFESSOR DICK'S REPLY.

I have no doubt the bull's penis was injured by the sudden motion of the cow, in the manner you describe; and from the

degree of recovery he had made previous to his being allowed to serve cows again, I think there is no doubt that a little more rest would have allowed the parts completely to have recovered from the effects of the injury. Even now, the best plan of treatment will be to keep him quiet, and to soothe the parts where the injury has been sustained by bathing them with warm water two or three times a-day, and to repeat the aperient medicine.

After the irritation has been subdued, a little iodine ointment may be tried, or anoint with lard, to remove the effect of your stimulants, and then bathe with cold water until the animal is well.

REPLY OF MR. ALEXANDER GRAY, JUN., V.S., EDINBURGH, TO MR. CLELAND, ON THE TREATMENT OF A FOAL.

Dear Sir,—IN looking over your periodical of last month, I can assure you I was not a little surprised at finding a communication from a Mr. Cleland, of Rosewell, concerning the treatment of a foal, the property of Mrs. Leslie Cumming, of Springfield, and in which my course of treatment pursued on that occasion is called in question.

As it is now nearly a period of six years since the circumstance occurred, and as, perhaps, my notes and memory may serve me better than Mr. C.'s, I shall endeavour, to the utmost of my power, to give a true description of the case, so far as I was concerned.

On the 9th of June, 1838, I was called upon to attend the foal in question. The person who came for me at the same time left word that the foal was purging severely. I accordingly proceeded to Springfield, taking with me the medicine I generally use in such cases, and with the most beneficial result; viz. a sol. of creta prep. and gum. catechu, with vin. opii added, if the age and strength of my patient will allow of it. Having arrived at Springfield, I found the mare (Hambletonia, dam of General Chassé, with her foal by Jerry) in a loose box.

On examination, I found that the foal shewed little or no symptoms of inflammatory action being present—that the mucous membranes were in a normal state—that the mouth and extremities were of a natural temperature—that when he purged it was a discharge of true fæces in a liquid state, but which being ejected (per ano) caused considerable irritation in that quarter, evinced by whisking of the tail, general uneasiness, &c., thereby shewing, in my opinion, that a redundancy of bile existed in the evacuations.

Judging, from these symptoms, that the purging was induced by an increased flow of bile into the intestines, caused by the severe exercise he had taken in the field after his long confinement, and increased by the altered condition of the milk of the mare, I administered a quantity of the medicine I have before mentioned, mixed in a little starch gruel, and threw up an enema of the same.

Before leaving him, however, I ordered that, if he shewed symptoms of pain by turning his head to his flank or by hurried respiration or soreness upon pressure, to foment his abdomen with a blanket wrung out of warm water, with gentle hand-rubbing on the surface of the body and extremities; but, independent of these, to continue drenching him with starch and oatmeal gruel, with occasional enemata.

I then left him, with the understanding that, if my services were again required, I should be sent for.

To return to Mr. C.—He sends the description of a case of obstruction of the bowels by overheated milk, as he is pleased to call it, the perusal of which certainly brought to my remembrance the fable of the mountain in labour, &c.

He goes on to say, in his 3d and 4th paragraphs, that I visited him, &c., and that, by the time Mr. C. reached Springfield, the purging had increased. Now, I am led to conclude from these sentences, that the foal was purging the day previous, when Mr. C. saw him, after being taken unwell; therefore I should say that the foal must either have been labouring under obstruction of the bowels before turning out (if it were possible to exist at all), and, of course, could not be produced by *over-heated*, or rather an altered state of the milk, as he had not as yet sucked it; or, on the other hand, that the altered condition of the milk, aided by the severe exercise, produced superpurgation, a case of which, in my opinion, Mr. C. truly describes, and which, Mr. Editor, in my practice I always find to be the case when a mare has been so irritated as to produce that chemical change on the milk, the nature of which we are unacquainted with.

But eventually Mr. C. proceeds, and by his own treatment causes obstruction or inspissation of the bile, by the administration of port-wine, magnesia, and other agents, and then leaves nature for three days to expel those corks (if I may so call them) which he himself had formed, and never attempts to assist her by the exhibition of laxative medicine.

You will, perhaps, allow me to tell Mr. C. a little more about his living wonder, as he calls him.

About five weeks afterwards this same mare and foal were travelled to Auchinleck, the seat of Sir James Boswell, a dis-

tance of seventy miles from Springfield. While on the road the foal was again attacked with severe purging (no doubt arising from the exercise and altered state of the milk), insomuch so, as I am informed, that the man who drove them despaired of the foal ever reaching its destination; that, on its arrival, it was treated in a manner something similar to what I have described, but with the assistance of a gentle dose of physic, when the purging ceased; that no balls were passed, and that the foal in a few days was all right again.

Now here, Mr. Editor, were the same causes applied (exercise and altered state of milk), but what is the consequence? Why, not the same result: there were no balls formed, at least none passed: but I think I can account for it—he had not the advantage of a Mr. Cleland, to pour *port-wine*, *rhubarb*, and *magnesia*, down his throat in indefinite quantities every two hours, but was treated by Mr. John Holloway, Sir James Boswell's private trainer, a man of good common sense.

In course of time the colt was put in training; but in the words of his trainer, Triumph, as he was now called, proved to be a flat-sided, washy brute; he was therefore withdrawn from the racing-stables, and sent to Doncaster last year to be sold, where he was eventually knocked down at the hammer by Mr. Tilburn for the sum of thirteen pounds.

I am afraid, Mr. Editor, that I am encroaching too much on your valuable periodical, and that you may accuse me of forgetting the old adage, *Vir sapit qui pauca loquitur*; I will therefore conclude with a respectful hint to Mr. Cleland, of whom I now take leave, advising him that, when the *cacoëthes scribendi* again comes upon him, to be a little more minute in describing his wonderful cures, and give them earlier to the profession, rather than allow six years to elapse between each; he will then be enabled to give every man his due: for I would condemn the individual who attempts to build his fame at another's expense, and would recommend Mr. Cleland to pull the beam out of his own eye before he attempts to find one in his neighbour's.

I am, dear Sir,

Your's sincerely,

A. G.

ON THE PRESENT EPIDEMIC AMONG CATTLE.

By Mr. H. HUTCHINSON, East Retford.

THE epidemic, or as it is more properly named by Mr. J. Barlow, the pleuro-pneumonic epizootic, having made its appearance in this neighbourhood, and in many instances proved fatal, I have hastily thrown together a few remarks thereon, which, should you deem them worthy to occupy a page of your valuable Journal, I shall feel amply repaid. There is one farm on which I have had a full opportunity of watching the disease in all its different stages. It is occupied by Mr. Wood, of Hodsack, and is a light and sandy soil, bounded on the north-east side by some low meadows, and, at the time of the disease first making its appearance, there had been a great deal of rainy and cold weather.

The first symptoms :—Constant hoozing—great irritability of the trachea, and pain upon pressure from the larynx to the sternum. The eyes appear dull and sunken—the muzzle is protruded, yet lower than usual—they separate themselves from their companions—continue to graze, but in an indolent manner—the secretion of milk is diminished and sometimes totally stopped—the coat looks unhealthy. The respiration is increased—the heaving at the flank is very considerable—after coughing the patient appears to suffer considerable pain. The pulse is from 60 to 70 per minute, but small and feeble—the ears and extremities are cold—the bowels in their usual state.

From the third to the eighth day the animal generally becomes worse—the breathing is more difficult—the respiration increased—the flanks beat like those of a broken-winded horse—the hoozing becomes more frequent, yet weaker—they begin to moan—there is disinclination to move—the bowels become daily more and more relaxed, and end in violent purging—there is rapid absorption of the muscles, with great prostration of strength. Should the animal, after the third day, appear to rally, it is marked by the cough becoming stronger—his lying down more frequent—his head becoming more elevated—his looking somewhat anxiously round when visited, and gradually seeming inclined to feed, although a very little satisfies him. He also frequently urines.

Treatment.—In the first stages I have found bleeding give great relief, from six to twelve pounds of blood being abstracted. In some cases, I repeat the bleeding on the following morning, but in no case have I found them to require or able to bear a third bleeding, debility being a strong characteristic throughout the whole of this disease, and so much so, that I have generally found

all my patients to require a slight stimulant, although at the same time I may be using depletive measures.

I generally clip the hair close off the sides of the chest, and from the spine to the sternum, extending well back and down the whole course of the trachea; I then rub in a strong blister composed of pulv. lyttæ, bichlor. hydr., spt. terebinth. et ol. lini, and repeat it in twelve, or from that to twenty-four hours, as the case may require; but before the blister is repeated the parts are ordered to be well fomented with hot water. Setons are inserted in the dewlap. I give submuriate of mercury, hydriodate of potass, nitre, powdered opium, and ginger, mixed with thick linseed cake gruel. If they will eat, I allow them scalded bran and oats, or linseed cake; but if they refuse all food I drench them repeatedly with thin gruel. This treatment I continue until the inflammatory symptoms have subsided, which generally takes place from the second to the fourth day, I then give tonics, as cupri sulph., ferri sulph., p. gentian, p. zingib., and small doses of p. lyttæ, twice a-day, repeating the saline medicine at noon, so long as the animal's respiration continues hurried. As they continue to progress towards convalescence they may be allowed a little green food, as potatoes, turnips, carrots, cabbage, or a small quantity of old hay soaked in warm water, or a few mashes. Continue the thin gruel for drink, or occasionally hay-tea. Great care is now required in feeding, as the least over-allowance of food will produce indigestion, which at all times, after illness, is attended with danger.

The post-mortem appearances discover extensive disease in the cavity of the chest. The bronchial tubes suffer in proportion to the duration of the disease in their being filled with frothy mucus. There is slight effusion of serum, with extensive adhesion between the plura-pulmonalis and the pleura-costalis, particularly in the right cavity of the chest. The substance of the lungs is hepaticized, and appears almost impervious to the air. The heart also is larger than usual, and of a darker colour; it has become flabby and has lost its usual dense muscular feeling. I will now state my cases as they present themselves.

CASE I.—A heifer, a week before calving, was driven with others two miles from turnips, and put into a shed, the night being wet. Two hours afterwards she was found in a violent perspiration, but by allowing sufficient ventilation she appeared to recover. She calved at the usual time—her first calf, and a very fine one. On the third day after calving, she was observed to breathe quicker than usual; she was off her feed, had violent hoove, and appeared weak. A farrier in the neighbourhood, or, as he styles himself, a veterinary surgeon, was sent for.

He bled and blistered her, and gave saline medicine. In forty-eight hours he again bled her. She gradually became worse every hour.

I was now sent for. Of course I declined meeting the would-be vet. I was, however, urged to visit her, which I did alone. It was on March 25, 1843, that I first saw her. The extremities, skin, and ears, were clayey cold—the head depressed—constant moaning—she would not look at any kind of food, and had very much lost flesh; in fact, she was rapidly sinking.

I immediately commenced the tonic treatment, with bandages to the legs, &c. She slowly recovered. She was turned out on a piece of clover on the 2d of May, continuing at that time very poor, with a slight hooze upon her. She is now in good condition, and expected to be again in calf.

CASE II.—*May 16th.*—A cow does not give so much milk as usual. She is very low in condition. She has not appeared in good health for the last twelve months. She hoozes—does not feed properly, and is rapidly losing what little flesh she had. I applied strong blisters, gave tonics, &c., but without any decided benefit. She died on the 26th.

The other milch cows are very low in condition, and hooze occasionally. I inserted a seton into the dewlap of each. They are turned into the meadows in the day, but lie up at night.

CASE III.—*June 9th.*—A milk cow appears the same as the last. Separate her from the rest, bleed to four pints, and give the usual sedative medicine. On the following day she was much worse. Give the tonics twice a-day.

CASE IV.—*July 2d.*—A fourth cow is ill. She is placed with the one last named in a yard by themselves, and put under treatment. Day by day both continue to get gradually worse. In some days they ate a little green food; but there was now no chance—they must die. They lingered until the 30th of July, when both died. They had become mere skeletons during the last fortnight.

Several others were attacked in the same way; but after the third day they gradually recovered. They are now beginning to carry more flesh, and appear healthier. The pasture is getting better, and they are eating a little linseed cake; but still they continue to hooze. They were setoned again and again.

CASE V.—*Aug. 2d.*—A bull eleven months old, hoozes slightly. He does not eat his cake as usual. He looks thin. He is in a separate stable from all the cows, and, being valuable, has had as much cake as he could eat. I bled him, blistered his sides, and gave sedative medicine three times in the day.

5th.—He is much swollen about his head, and under his jaws:

it looks like an attack of erysipelas. I again bled to eight pounds, and lanced the swellings freely. I gave the medicine as before, and applied hot water and blisters to the swelling.

6th.—More swollen; his eyes nearly closed; he drinks a little thin gruel, but will not eat unless the food is placed between his teeth. In this way he has been induced to eat half a quartern of cut grass and bran. From this day until the 11th he gradually got worse, and then died.

Post-mortem Examination.—His lungs were exactly the same as in the previous cases. There was extensive union of the pleura, and engorgement of the heart, and but little effusion of serum. The lining membrane of the trachea shewed extensive traces of inflammation.

At this date there are three more cows affected, and which complete the lot of sixteen in number. The biggest and freshest of these three died on the seventh day after the attack. Two others slowly recovered. There is yet a bull on the premises. Particular care has been taken so as to keep him from coming near any of them. He is in a stable by himself, which stable is surrounded by a private yard; but it is of no avail, as the following account will testify:—

Sept. 19th, 1843.—A three-year-old short-horned bull (Julian) is slightly off his feed. He is rather dull, and hooses. He has some difficulty in rising, breathes heavily, and this peculiarly evident at the flanks. I bled him to fourteen pints, and blistered his sides and throat severely; inserted a seton in the dewlap, and gave the sedative medicine.

20th.—No better—hooses more—less inclined to feed—disinclination to move—decided pain when moving. I repeated the medicine, as before, applied hot water, and afterwards repeated the blister to his sides—frequently drenching him with thin gruel.

21st to 30th.—Gradually worse—he is losing flesh and scarcely eats any thing. The tonic medicine was given twice a-day, and the sedative at noon. His kidneys are frequently acted upon, which I consider a favourable circumstance.

Oct. 1.—There is a decided improvement. He has, during this day, eaten a few potatoes and two turnips. Continue the medicine.

2d to 12th.—Gradually improving, give the tonic three times a-day, and discontinue the sedative medicine.

13th and 14th.—Not so well—refuses his food—more irritable—breathes heavier—slightly moans—bowels costive—head low—eyes sunken. I gave the sedative and tonic medicine, combined with linseed oil, and re-applied the blister. It is an attack of indigestion.

21st.—The illness of yesterday was an attack of indigestion. He is again going on in a favourable manner—his appetite is improving, and his ears and extremities are becoming more of a natural warmth.

28th.—Doing well. Reduce the doses of tonic medicine.

31st.—Well. Medicine discontinued.

Sept. 29, 1843, I was sent for to a cow seven weeks from calving. She was similarly affected to those which we have described, excepting that she made more noise in breathing, and her flank heaved with greater force. I bled her twice, blistered her chest and throat severely, and gave her the mercury freely. In five days' time she was discharged well, but weak.

Oct. 22 she calved. The calf had been dead some time.

I think I have now stated most of the symptoms as I met with them. Perhaps you, Mr. Editor, or some of the contributors to your valuable periodical, will oblige me by stating your opinion as to the infection of this disease. I certainly do not think it infectious. All the cases I have stated were certainly similarly affected. The bulls were always kept from them, yet they had the disease as violently as any of them. The cows were running in the meadows, and only separated from some cows belonging to the next farm by a small rivulet. They had it not, nor do I hear of any being similarly affected in that immediate neighbourhood: as to Babworth, only one cow has been attacked, although at the time she was in a field with some others, and is now again with them.

A CASE OF IMMENSE ABSCESS IN THE ABDOMEN OF A COW.

By Mr. W. G. TAYLOR, V.S., Wentworth.

As I am residing for a short time with Mr. G. Horsfield, of Wentworth, Yorkshire (and with whom, I think, you are personally acquainted), for the purpose of seeing as much cattle practice as possible, perhaps you may think a case now and then not unworthy of insertion in your interesting periodical. The following is one of obstinate constipation in a six-year old cow, of the short-horn breed. Until the time of her being taken up, which is about three weeks since, she seemed to all appearance to be in good health, yielded her usual quantity of milk, fed well, and rumination was carried on regularly.

Although this is not a successful case, so far as the recovery of the animal is concerned, I think that our veterinary knowledge is almost equally advanced by the description of those cases in which death terminates the scene, as we have the advantage of a post-mortem examination.

After she had been up a week, she was observed by the cowman not to void her usual quantity of fæces. Not much notice was taken of this for two or three days, as in other respects she appeared to be in health; but still continuing to void them in less and less quantity every day, Mr. Horsfield was sent for, who, on external examination, could detect no cause why this should be the case; but, on inquiry, learned that the animal had for some time past been labouring under a morbid appetite, evinced by her eating, whenever she could obtain such articles, the soles of old shoes, or linen, which might perchance be hung on the hedges of the field in which she was grazing. The rumen was full, but emitted a tympanic sound when struck. Mr. Horsfield, November 1st, prescribed a dose of opening medicine, such as is usually given to cattle.

The draught was given; but there was no action of the bowels.

2d.—Still the same. She refuses her food. Rumination has ceased. Administer frequent enemas.

3d.—No change. She does not appear to suffer any pain, generally lying down. Pulse 32. Repeat the draught.

4th.—Losing flesh fast; but in other respects the same.

5th.—Give magnes. sulph. ℥j, aloes B.B. ʒj, pulv. zingib. ʒss; support her by gruel.

6th.—As the animal was still no better, or rather was evidently sinking, we determined, as her only chance of recovery, to lay open the rumen, and remove the contents. Having secured her to a gate, we made an incision sufficiently large to introduce the arm, taking care not to let any of its contents escape into the cavity of the abdomen. Her first and second stomachs contained, by measure, the enormous quantity of twenty-eight gallons, all in a fluid state, and consisting principally of the gruel she had had. We could not detect any foreign body, with the exception of a little sand and coal slack.

Now giving up all hopes of her recovery, we left her, after bringing the edges of the wound in apposition by sutures, leaving word that we should be informed as soon as her death had taken place, which it did in the course of the night.

Sectio cadaveris.—On laying open the abdominal cavity, we found what at first sight appeared to be an extensive attachment of the rumen to the left lobe of the liver and diaphragm; but, on

more minute examination, proved to be an immense abscess, filled with a fluid resembling cream more than any thing else, at least four quarts : I think that I am stating rather under than over the mark. The sac which contained the pus appeared to be formed of the peritoneal covering of the liver, but much thickened and altered in its structure. There was also a smaller abscess attached to the right lobe of the liver.

The general appearance of the liver was healthy ; the gall-bladder full, and its contents of a pale straw-colour ; the intestines perfectly empty ; the abomasum and maniplus the same—indeed the latter had an appearance as if it had been washed and sponged, so perfectly free was it from food.

There was no apparent cause for the obstinate constipation which existed, with the exception of the abscess.

I think you will agree with me that it could scarcely be called a case of constipation ; but one in which the abscess, by its weight, acted mechanically in preventing the passage of the food from the reticulum into the maniplus.

OBSTRUCTION OF THE ŒSOPHAGUS BY A BONE.

By Mr. W. BARKER, Stokesley.

THIS being an incident of uncommon occurrence, and knowing with what ardency and zeal you study the welfare of that noble and faithful companion of man, the dog, I am induced to send you the following narrative for insertion in your valuable periodical.

On Tuesday, the 3d of October, 1843, I was sent for to look at a hound, the property of Lieut.-Col. Hildyard. The huntsman informed me that, whilst out at exercise, the dog in question discovered a bone on the side of the road, which enticed him to fall out of the ranks ; the whipper-in following perceived what he was about and saluted him with a stroke from his whip. The dog, being intent upon the object of his prize, rather than lose it, swallowed it without mastication. The result was that it stuck in the Œsophagus, and caused the animal to use violent efforts to throw it up, but all in vain. It had become an immoveable fixture. The dog travelled home, continually attempting to expel the bone, and foaming at the mouth ; until at length, being perfectly exhausted, he lay down with his nose protruded, and gasp-

ing terribly. I examined him, and presently discovered the situation of the bone. Its extremity nearest the stomach was just to be felt anterior to the first rib. I tried various manipulations to force it from its position, but in vain. I gave him 5 oz. of ol. lini, part of which he swallowed, and the remainder he cast up again, mixed with a quantity of bloody spume. I ordered him into an apartment where he could be alone.

4th.—The oil has operated. All solid food was forbidden, but let him have a little broth, which he took very sparingly. I fancy the dog to-day, in his attempts to cast up the bone, has displaced it a little.

5th.—No fæces have passed. During the night I gave a little more oil, which was received and rejected as before. I then had the dog's head held in a proper position, and with a probang tried to force the bone down into the stomach: in this attempt I was unsuccessful.

6th.—The dog lay to-day quite unconscious of the voice of his keeper, and during the night has vomited a quantity of mucus and blood. Matters had now assumed a desperate appearance, and I told the Colonel there was no chance of saving the animal's life but by making an incision through the integuments and muscles and into the œsophagus. He, however, wished me to try the probang once more before I had recourse to the operation: I accordingly made another attempt, but with as little success as before.

The evening was now far advanced, and my employer wished that I would delay the operation until morning.

7th.—The dog, as might be expected, is much worse this morning, and unable to hold up his head. I feared the parts contiguous would be in a state of gangrene, on account of the bone being in the œsophagus so great a length of time; however, as soon as I was able to see, I had him muzzled, laid on the right side, and properly secured, and had an attendant to press at the lower part of his neck opposite to the bone from below upwards; which caused the bone to assume a prominent position, and enabled me to perform the operation with greater facility.

I found the œsophagus in a very putrid state, emitting a remarkably offensive smell, and, surrounding the bone, there was also a large secretion of muco-purulent matter. After removing the bone I washed the parts with diluted brandy, and brought the edges of the œsophagus into actual contact by means of sutures, as well as the integuments, and dressed the external wound daily with tinct. myrrh co. The dog appeared faint immediately after I had finished the operation, and I gave him a little brandy

and water. I endeavoured for two or three days to support him with nutritious enemata, and, after this, allowed him to lap a little broth or thin gruel. An healthy action was soon reinstated; the dog daily began to improve, until at length he was convalescent, leaving no traces of the wreck behind him. The bone measured in length $3\frac{1}{2}$ inches, and 2 inches at its base: it is the superior extremity of the femur of a sheep.

CONSTIPATION.

*By WILLIAM PERCIVALL, M.R.C.S., Veterinary Surgeon
First Life Guards.*

29th Oct. 1843.—Captain R—'s first charger, a horse for which he has refused £350, was seized, about ten o'clock in the morning, with symptoms of uneasiness, indicating pain in his bowels. He lay down and rolled, and repeated this more than once; and, in consequence, the groom took him out for exercise.

11 o'clock.—Being unrelieved after his exercise, my assistant was sent for to him. The case, to him, appearing evidently one of "gripes," he administered without delay an antispasmodic ball, and ordered him out, a second time, for exercise. After another exercise, a quarter of an hour in duration, no relief being obtained, the horse was removed into an infirmary-box, distant about a quarter of a mile.

About half-past 11 o'clock I saw him. I was told by the groom he had passed dung *early* in the morning, and again, sparingly, at ten o'clock; but not since. He was now, loose in the box, pawing occasionally, shaking his tail, looking about for places to lie down upon, and would have lain down had we not prevented him. In fact, he had the ordinary symptoms of choleric, with a small, quick, thready pulse, and a countenance betraying pain, but not of a sharp character. Altogether I did not think the case was one that demanded blood-letting, and therefore, for the present, ordered my usual antispasmodic draught, composed of compound decoction of aloes (Barbadoes) with the addition of tincture of opium and the spirit of nitrous æther; also a simple enema. After the drench had been administered, and before the enema was given, he passed dung again, about equal in quantity and similar in other respects to an ordinary evacuation. The injection brought away no dung. I ordered him out again, after this was done, to take walking exercise for about half

an hour ; and then to be returned to his box, littered down, and let loose. He now was tranquil, stood in one place, taking little notice of any body or any thing that was doing. At half-past two o'clock, a warm bran mash and some chilled water were offered to him, or rather placed at his disposal ; but he loathed both.

5 o'clock, P.M.—He had become again uneasy. He was found walking round his box, searching for places to lie down ; then lying down and rolling, looking at his flank, and otherwise expressing the same pain he had felt before. My assistant administered another simple enema, which brought away a considerable quantity of dung, nowise differing from that ordinarily passed. Then again he was led out for exercise ; and, while walking out, several times was remarked to strike his belly with his hind feet : and great difficulty was experienced by the groom in preventing him lying down. Soon he was returned again to his box, and, no sooner let loose therein than he lay down and rolled, and arose again, and repeated this over and over again, looking at the same time with much distress at his flank, and then he commenced blowing and profusely sweating in patches, under the belly and between the legs. This was not to be endured a moment ; and, therefore, sixteen pounds of blood were immediately abstracted ; which done, extra warm clothing was put upon him : and, his legs, which were quite cold, were rubbed until warm, and afterwards encased in flannel. His bed was set smooth once more, and, appearing relieved by the blood-letting, he was left again to himself. Being watched through the key-hole of the door, he was observed to stand quiet for about a quarter of an hour, during which he had a scanty motion. He next lay down, and remained reclining upon his near side for the space of twenty minutes. Then he became again restless, rising upon his legs, and lying down, but not expressing so much pain as he had done.

A quarter before 8 o'clock, P.M.—He had another copious discharge of dung of the ordinary character, in soft conglomerated balls. At half past eight o'clock I saw him again. Finding that he had been bled abundantly in my absence, according to directions I had left, and that the blood-letting had relieved him, and that he was now, compared to what he had been, manifesting but slight uneasiness, I ordered a mustard embrocation to be applied to the belly, with a view of, by counter-irritation, withdrawing any disposition there might be to the setting-in of inflammation : thinking that the present relief would only prove temporary.

My assistant and the groom sat up in attendance on him during the night, visiting him about every half hour. He continued free from the expression of any pain, and passed dung no less than four or five different times.

Oct. 30th.—At six o'clock this morning he began to evince pain again. His respiration became quick, and expressive of irritation, both his nostrils and flanks shewing sensible movement. I saw him at eight o'clock, at which hour there was evidently considerable irritation expressed, owing, apparently, to dull pain or much uneasiness in his bowels. His pulse was 90—his breathing short and irritable—his countenance desponding. The cathartic draught had not operated, and, therefore, I ordered him four ounces more of the comp. decoct. of aloes—a repetition of the blood-letting, to the extent he would endure, which proved to be to the amount of twelve pounds—and this was followed by a copious perspiration. The mustard blister was repeated to his belly, and the tobacco-smoke enema was administered. About a dozen lumps of dung were voided after the enema; and, therefore, I ordered a repetition of it at mid-day and in the evening, being compelled, myself, to leave home for the day. Such subsequent enemæ brought away a few lumps of dung, but nothing like a full dunging, or an approach to catharsis; though once was remarked a conglomeration of dung-balls, the size of a pint pot.

6 o'clock, P.M.—I saw him again. He was expressing little more irritation than in the morning. His pulse was small and compressible, and reckoned 90. The blister to the belly had made the parts very tender. I ordered him another tobacco enema at eleven o'clock, P.M., and to be set up with.

Oct. 31st.—The clyster brought nothing from him. He remained tranquil the fore part of the night; but at four o'clock, A.M., his blowing commenced again. Tobacco-smoke was tried again; but now, as it had done the time before, failed to elicit any discharge of fæces. I visited him at nine o'clock, A.M., and finding that his cathartic medicine (although he had now taken \mathfrak{z} ij of Barbadoes aloes) had, together with the clysters of tobacco he had received, both failed, I came to the resolution to try a practice I had, in two previous cases of similar character pursued with success, viz. the exhibition of mercury with opium, and, therefore, ordered the following ball to be given every ten hours, without intermission during the night:—

R Hydrarg. chlorid.	3j
Pulv. opii.	gr. v
Terebinth. vulgar.	3ss
Farin. avenæ.	q. s. ut fiat bol.

2 o'clock, P.M.—He passed a few dung-balls, and, an hour afterwards (at three o'clock) passed a scanty portion of soft dung.

6 o'clock, P.M.—Is now tranquil, and apparently free from all

sharp pain, though his countenance would not lead one to think he is free from pain altogether. There appears still dull pain or annoying feelings in his bowels. His belly, which has never been very large or tense before, seems getting so now.

Nov. 1st, 9 o'clock, A.M.—He has commenced “blowing” again; and his pulse has got up again to 90, and is small, indicating irritation more than inflammatory action. The tobacco-enema was administered with no effect. Let him continue his calomel and opium: I see no other chance of saving him.

7 o'clock, P.M.—He has very slightly purged in the course of the afternoon.

Nov. 2d.—Purging freely. He has taken nine drachms of calomel. His breathing is tranquil again, and his pulse has got down; and he appears, now that his bowels are being plentifully relieved, to be in the road to recovery. He has also, for the first time since he was taken, shewn an inclination for food. Discontinue his balls, and make him some gruel, and get him a handful or two of very nice hay.

Nov. 3d.—Still purging. Has commenced feeding with an appetite. Refuses now to drink gruel; therefore let him have chilled water.

4th.—Diarrhœa ceasing; dung now being in a soft mass. Pulse 44.

5th.—Going on well. Bowels regular, dung in balls of the ordinary character.

After leaving the infirmary he became affected with tainted breath and tender mouth, from the mercury.

Observations.—Two circumstances distinguish this case from one of cholic: the symptoms, although they intermitted, were not of that acutely painful character; and, moreover, they proved protracted beyond any thing cholic would have done. There was evidently intestinal disease; but there was no more reason for believing it was enteritis than cholic; for, as I said before, the symptoms were not urgent enough for either one or the other. And, again, had the disorder consisted in inflammation, there would have been no such intermissions, during which the patient appeared free from pain, as there were.

The case being neither cholic nor enteritis, and yet evidently one of bowel irritation, the scantiness of the alvine discharges, and the irregularity of them, together with their nature, led me to call it *constipation*; and I think the result has borne me out in my diagnosis. One thing is certain,—that it was at once relieved, I may say cured, by *catharsis*. But how was this desirable object effected? Although the two ounces of Barbadoes aloes may have contributed towards it, they did not appear, from

the interval that took place between their administration and the purgation, to have *primarily* set the bowels in action. Nor did the tobacco-enemata succeed; for, after about three injections, they appeared, as I have noticed in cases before, to lose their stimulating power. I believe, myself, that the mercury accomplished the purgation; and I feel more confidence in thinking so, from having, in three or four previous cases, made the same observations. Indeed, I begin to think that mercury has been very unwisely cast into the back-ground in veterinary medicine. In such hopeless cases as the present, and in those, equally hopeless, of chest affections, I have, for some time*, myself, made mercury my sheet-anchor.

HARD TUMOUR IN A MARE.

By A. S. COPEMAN, V.S., Walpole.

Nov. 11, 1843, my attention was requested by P. C. Goodwyn, Esq., to an aged mare, of large size, beautiful symmetry, and in fine condition. It had been observed for some long time past that she moved stiffly and awkwardly, as if slightly injured in her loins; frequently she would weave her head, particularly after drinking water from the pond, and if sharply corrected, or her head suddenly elevated, it produced a general tremor of her whole frame, which lasted for several minutes: still she performed her work and kept up her condition to last night, without shewing any other symptoms of disease.

On examining her this morning, the following symptoms presented themselves: pulse 65, full and wiry—mouth injected, hot and dry—skin glossy—continually weaving her head, very uneasy, frequently walking round her box with a stiff, awkward, staggering motion, the whole body in a state of tremor—contractions of the muscles of the breast—the right leg frequently raised quickly from the ground, stretched out forward at full length, and held in that position for some seconds.

Treatment.—Bleed two gallons, except symptoms of syncope should sooner make their appearance. Put her in a cool box, apply warm clothing, give in solution Barb. aloes ℥iss, with tinc. zingib. ℥j. Have all possible quietness about the stable.

6 o'clock, P.M.—She appears in every respect as reported in the morning, except that the pulse is more accelerated, the pupil of the eye dilated, with intolerance of light. Bled to 12

* See THE VETERINARIAN for 1842, p. 336, *et sequent.*

pints, when the heart's action lost its force—gave aloë ʒss, opii ʒiv, camph. ʒij, in solution, enemas, etc. etc.

12th, 6 o'clock, A.M.—Pulse 85. Body generally warm—bowels torpid—she is very restless—pupils more dilated, greater intolerance of light—the fore legs adducted forward—almost continual contractions of the muscles of the breast and shoulders—frequently twitching up either leg. Give ol. lini Oss, ol. croton 40 gr., opii ʒiv; apply oil of cantharides to the spine, and throw up copious enemas.

5 o'clock, P.M.—Pulse 89, or thereabouts; for she is so uneasy, and the tremor of the body so great, that it is difficult to take the pulse at all. The body still retains its warmth—the mouth stercoraceous—respiration accelerated and stertorous—the fæces pultaceous, the blisters acting well. Give opium with camphor.

10 o'clock.—The pulse could not be counted, respiration was so quick and stertorous. She has lain down several times for a few minutes, and when standing she generally finds some point to rest either her head or chest against, throwing nearly the whole weight of her body forcibly forward.

13th, 3 o'clock, A.M.—Dead.

Autopsy.—Stomach healthy, containing but little food. The intestines distended with considerable flatus and fluid fæces, but healthy in structure. The liver and spleen normal—lungs slightly congested—heart normal.

I next carefully examined the whole of the spinal column, taking the head off at the dentata, in order to enable me, with a better chance of success, in minutely examining the brain, but could not find the slightest abnormal appearance in any part of the spine.

Cranium.—Upon making a section of the bones, the ventricles of the brain were found to contain about an ounce of dark straw-coloured fluid—the vessels of the brain were much congested. Having removed the cerebrum and cerebellum, a firm tubercular excrescence, about the size of a walnut, was situated directly under the neck, or what anatomists call the crus cerebri of the cerebrum. It was firmly adherent to the pericranium, and directly anterior to the suture which unites the occipital with the cuneiform process of the sphenoid bone.

THE VETERINARY ART IN INDIA.

By J. GRELLIER, Esq., M.R.C.S.

[Continued from p. 651.]

INFLAMMATION OF THE EYE.

THE organs of vision are more subject to be diseased from natural causes than any other in the animal economy, which I imagine may proceed from the eye-ball being so compound in its structure; its membranes and humerus so delicate, both in their texture and functions; its vessels so minute, that the least irregularity in its circulation, whether from internal or external causes, must unavoidably produce obstructions or pressure on some of its parts, and any one part being defective destroys or deranges the mechanism of the whole.

A minute description of the eye must tend rather to confuse than elucidate the subject; and yet, that the reader should have some general knowledge of its structure and economy, I think requisite towards attaining a knowledge of its diseases.

The eye is composed of several coats, containing humours for the purpose of refracting the rays of light and converging them to a focal point; which point falls on the expansion of the optic nerve, seated on the posterior part of the eye, by which the sense of vision is conveyed immediately to the brain.

This mechanical structure is founded on the first laws of optics; consequently any person the least versed in that science may attain an immediate knowledge of the economy of the eye.

It is divided into two chambers, the anterior, which contains the aqueous or watery humour, and the posterior, containing the crystalline or glassy humour. The rays of light, not being sufficiently refracted by the atmosphere, pass through the external coats of the eye, which, being convex, increase the refraction; they then pass through the watery humour, which not only increases the refraction, but, perhaps, serves to keep a proper space between the refracting mediums: the rays not yet being sufficiently converged, pass through the crystalline lens, which, being hardest in the centre, draws the rays rapidly to a focal point, which is received on the expansion of the optic nerve, where the object is delineated, and is conveyed from thence to the brain*.

* As the too great concavity or convexity of the eye is known to affect the human vision by removing the focal point from the optic nerve, may not the same causes produce that shyness on the road, and other symptoms of imperfect vision in the horse, when the eye is perfectly free from disease?

In the middle of the eye there is a thin, round, muscular membrane, called the iris; and that which appears a black spot in the centre of it, and of an oblong shape in the horse, is an aperture termed the pupil, through which the rays pass. This membrane is radiated and gives colour to the eye, as brown and blue in the human subject, and wall-eye, brown, or cinnamon-colour, in the horse, which last is observed to be most free from disease. It likewise dilates and contracts according to the proportion of light the eye is exposed to. Thus, on examining the pupil of a horse, the future state of vision may be prognosticated with some degree of certainty. On a horse being brought from a dark stable and exposed to a considerable glare of light, the pupil will contract, if his eye be sound, in order to diminish the number of rays which at first stimulate the optic nerve. On the contrary, if any of the humours be cloudy, he expands his pupil to receive all the rays possible, as the objects pass on to the optic nerve in a very confused form, having the same effect as looking through a telescope immediately after the glasses have been breathed on.

The very delicate structure and transparency of these parts will in some measure account for the obstinacy which frequently attends the cure of diseases; why they are so liable to a return of the complaint; and why impaired vision must inevitably be the consequence of these returns. The circulation of these parts is conducted by very small capillary tubes, conveying only the finest and most transparent particles of blood. If the circulation of these parts is much increased, as in local inflammation, and the blood rushes with a great degree of impetus, the consequence is a rupture of the capillary tubes, and an admission of red particles of blood to membranes and humours which were before perfectly transparent; and on the inflammation subsiding, and the parts being in some measure restored to their primitive order, the eye will be left in nearly the following state:—the delicate mechanism of the capillary vessels strained, ruptured, and deprived of their tone, by which the eye will be very liable to be again affected; and the beautiful transparency of its parts slightly obscured, by having circulated grosser fluid than nature designed them to do.

I cannot omit mentioning a muscle of the horse's eye in this place, as it tends to confirm an opinion adopted at the Veterinary College against that of farriers, &c. Most cases of inflammation of the eye are said by the latter to arise from blows, or some external violence which the animal has received. I will venture to affirm that not one case in twenty arises from that cause; for the eye, in its natural position, is in a great measure defended by its orbit; but on any violence being threatened the animal, or any

thing held before his eyes, he exerts the power of this retracting muscle, which is attached round the posterior part of the eye, by which it is drawn a considerable distance within its orbit; and the same power propels a strong cartilaginous substance called the haw, which instantly covers the anterior surface of the eye, by which means the whole ball is secured*.

THE VETERINARIAN, DECEMBER 1, 1843.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

I BEG to offer Mr. Turner many thanks for his kind and valuable letter, contained in the present number. I claim not a tithe part of the merit which he would attribute to me; but, labouring with him and many other noble spirits, we have, I trust, effected a thorough revolution in the treatment of Rabies Canina.

We grapple with it in its earliest stage by the occasional but rare use of the knife, and the constant but not cruel application of the *lunar caustic*. We laugh to scorn, in the present day, the various medicaments with which the patient used to be loaded; and we have also discarded—I wish that I could say thoroughly—the deliquescent caustics with which he used to be tortured, but which did not—could not—always extirpate the poison. We have, in the terse language of Mr. Turner, “crushed the serpent while in his germ, in almost innumerable instances among the lower animals, and happily in many a human being.”

Mr. Turner is anxious to proceed farther; and so am I. I will relate two modes of proceeding which I have lately adopted.

When a dog has been bitten under circumstances of suspicion I have had every part of him shorn; and the consequence has

* The comparative variations between the human and horse's eyes are as follow:—

1st. The horse's eye has one muscle more than the human subject; viz. the retractor oculi.

2d. The haw, or membrana nictitans of anatomists, improperly so called in the horse, as it is rather cartilaginous than membranous.

been, that I have discovered one or more minute wounds, which in process of time might have been the possible or probable source of disease.

In two instances horses were bitten by or exposed to the bite of a rabid dog. I had both of them clipped, and I found minute wounds on each of them, which would certainly have escaped notice, and might have been the cause of death.

Mr. Turner supposes that "spasm of the glottis is found among the first alarming indication of rabies; that it is never absent, except at short intervals; and that it invariably exists with redoubled fury at the close of the awful scene."

I confess that, in my practice, far more limited than that of Mr. Turner, I have seen, comparatively, little of this spasm of the glottis. I have seen the horse that was in the morning perfectly well brought home at noon, trembling, heaving, staggering—working himself into the highest state of excitation, uttering the most dreadful cries, and ready to accomplish every kind of mischief, his countenance wild, and his lips quivering. A few hours have passed over—perhaps not an hour—and he is, comparatively, quiet; he seeks for notice and for relief. Then, indeed, there is occasionally something like spasm of the glottis—a violent disturbance of the respiratory organs; a horrible species of delirium comes over the poor fellow; he is perfectly without controul; he injures himself, and destroys every thing around him, until he falls exhausted or dead. I acknowledge that it would be a glorious thing to be able to afford the tortured animal even a temporary respite; but how is this to be accomplished? Will it be an easy or a practicable matter, or consistent with our own safety and that of others, to cast this poor beast, and to keep him down while we perform on him the operation of tracheotomy? I should much fear the practicability of this; and yet I should glory to see our friend successfully employed in effecting the operation. If he ever does attempt the experiment, "may we be there to see!"

May we remind our readers of the commencement of our Journal of 1843? It was a noble list of contributors which then graced our pages. We will endeavour to deserve a continuancer of their support.

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